

REPORT OF THE PROCEEDINGS

OF THE

Northumberland and Durham

MEDICAL SOCIETY.

SESSION 1875-76.

NEWCASTLE-UPON-TYNE :

PRINTED BY M. AND M. W. LAMBERT, No. 50, GREY STREET.

1876.

OFFICERS FOR THE SESSION 1875-76.

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S. W. BROADBENT.

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J. S. DENHAM, M.D.

F. PAGE, M.D.
G. H. PHILIPSON, M.D.

SECRETARY.

BYROM BRAMWELL, M.B.

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G. T. BEATSON, M.D.
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C. CARR.

J. FRAIN, M.D.
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G. B. MORGAN.
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Bolton, Geo., Sunderland
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Dodd, Thomas A., Westgate Road
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Lightfoot, R. T., Northumberland St.
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Macaulay, John, M.D., Rye Hill
Mackay, Alexander, Crook
MacLachlan, Alex., M.B., Higham Place
MacLagan, J. M., M.D., Riding Mill

Macrae, John, Gateshead	Russell, J., Percy Street
McBean, Samuel, Portland Place	Scotland, Thomas, M.B., Ridley Place
McDonald, J. W., M.D., Crook	Shiell, W. R., Chester-le-Street
McDowall, T. W., M.D., Morpeth	Smith, R. Ayre, M.D., Sunderland
Maddison, N. P., Jarrow	Smith, James, Blenheim Street
Manford, F. W., Regent Terrace	Spear, John, South Shields
Manson, R. T., Howden-le-Wear	Stephens, T., North Shields
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Monteith, J. M., M.B., Dispensary	Walker, Allen, Seaton Burn
Morgan, G. B., Sunderland	Ward, H. D., M.D., Blyth
Murphy, James, M.B., Sunderland	Wear, Arthur T., Dispensary
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O'Hanlen, J. C., Spennymoor	Wilson, R. H., M.D., Gateshead
Page, F., M.D., Saville Row	Wilson, Robert, M.D., Alnwick
Pearl, Robert S., M.D., North Shields	Wilson, Samuel, Westoe
Philipson, G. H., M.D., Eldon Square	Wilson, Thomas, Wallsend
Ransom, Fred., M.B., Sunderland	Wilson, W. T., M.D., Marlborough Cresct.
Rawlings, James, Hartlepool	Wilson, C., Cullercoats
Reid, J. T., Ryhope	Wood, T. O., Kent County Asylum
Robson, James, South Shields	Young, Ralph, New Bridge Street
Robson, R. N., Durham	Yeld, H. J., M.D., Sunderland

HONORARY MEMBER.

T. M. Greenhow, M.D., Roundhay, Leeds.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE annual meeting of the Northumberland and Durham Medical Society was held in the Library of the Newcastle Infirmary, on Thursday, September 30th, 1875, Mr. S. W. Broadbent, President, in the chair.

The following gentleman was elected a member of the Society:—

Edward Jepson, M.R.C.S., Durham.

The following gentlemen were proposed for election as members:

Robert Anderson, M.D. (Edin.), Cramlington.

C. Wilson, M.R.C.S., Cullercoats.

J. Mitchell Monteith, M.B. (Edin.), Newcastle.

F. Barrow, M.R.C.S., Morpeth.

George Bolton, M.R.C.S., Sunderland.

Robert Barker, M.R.C.S., L.R.C.P., Sunderland.

W. Lovell Hunter, M.B., Castle Eden.

George Welford, jun., M.R.C.S., Sunderland.

The SECRETARY (Dr. B. Bramwell) read the Annual Report, as follows:—

REPORT OF THE COMMITTEE.

Your Committee have much pleasure in being able to state that the Society is in a highly satisfactory condition, and that the session 1874-75 was a most successful one.

All the meetings were well attended. There was a large addition of new members, and the work done, both in amount and quality, compares favourably with that of previous years.

During the year, 33 new members have been elected, 2 members have died (Dr. Reid, of Castle Eden, and Dr. Rolff, of Gateshead), 6 have resigned or left the district, the names of 4 have been struck off for the non-payment of subscriptions.

The Committee much regret that Dr. Humble has been compelled, on account of ill health, to resign his place in the Society. Dr. Humble was an original member, and a late president. The Committee deeply sympathise with him in his affliction, and hope that his health may be soon restored.

Your Committee notice with sorrow the decease of Dr. George Robinson, an honorary member, and one of the founders of the Society—indeed, it may be said that to Dr. George Robinson the Northumberland and Durham Medical Society owes its existence. He was the first secretary, and, so long as he resided in Newcastle, a most enthusiastic and active member.

The income and expenditure during the year was as follows:—Income, including a balance brought forward of £23 12s. 7d., £91 2s. 4d.; expenditure, £62 17s. 6d.; leaving a balance in hand of £28 4s. 10d. The unpaid subscriptions amount to £11 10s.

The increase of expenditure is chiefly due to the cost of printing. This increase is explained by the fact that a larger number of copies of the Transactions are now required, and that the printed matter of last year greatly exceeded that of the previous session.

The Committee recommend that £10 10s. of the balance be paid to the treasurer of the Infirmary Library fund, in accordance with Rule VIII., and that the remainder, £17 14s. 10d., be carried forward to next year.

The Committee recommend that the discussion on the Prevalent Diseases of the District be strictly limited to fifteen minutes. This arrangement is, in the opinion of the Committee, necessary in order that due time may be given to the other business of the meetings.

The Committee also recommend that the description of Pathological Specimens and of Patients Exhibited at the meetings be verbal and brief.

The following is a list of Papers read, and of the Specimens exhibited during the session 1874-75:—

PAPERS.

Mr. W. J. BARKAS—On the use of the Camera Lucida to medical and other microscopists.

Dr. GIBB—Notes on the local use of the liquor ferri perchloridi fortior in cancerous ulcerations of the uterus.

Dr. EMBLETON—Case of tumour on the base of the skull.

Dr. EASTWOOD—On the early diagnosis of General Paralysis of the Insane.

Dr. B. BRAMWELL—1. Case of intra-thoracic tumour, with secondary deposits in supra-renal capsules. 2. Case of cancer of the stomach.

Mr. ANTHONY BELL—Epithelioma of the floor of the mouth.

Dr. YELD—The origin of Typhoid Fever.

Dr. J. W. MACDONALD—On Bronchial Hæmorrhage.

Dr. ARNISON—Case of Staphyloraphy.

Dr. PHILIPSON—Case of Lymphæmia.

Mr. S. W. BROADBENT—Case of Extra Uterine Gestation.

Dr. Foss—Case of English Cholera caused by the inhalation of sewer gas.

PATHOLOGICAL SPECIMENS.

Dr. GIBB—Small Fibroma.

Dr. PHILIPSON—Spleen of leucocythaemia.

Mr. H. E. ARMSTRONG—1. Bovine parasite Filaria. 2. Bovine parasite “Beef Measles.”

Mr. MORGAN—1. Cancer of liver. 2. Cast of uncommon form of misplaced testicle. 3. Cast of congenitally contracted palmar fascia.

Dr. HEATH—Thirteen vesical calculi.

Dr. HOPGOOD—1. Osteoid cancer. 2. Cystic polypus of uterus. 3. Cancer of uterus with pregnancy. 4. Diseased tarsal bones. 5. Acephalic monster.

Dr. ARMSTRONG—Two vesical calculi.

Dr. PAGE—1. Large ovarian cyst. 2. Aortic aneurism.

Mr. BROADBENT—Scirrhus of Rectum.

Dr. BEATSON—1. Fractured cervical vertebræ. 2. Loose cartilages removed from knee joint.

Mr. FIELDEN—Large fatty tumour.

Mr. MORDEY DOUGLAS—Omentum from large epiplocele.

Dr. B. BRAMWELL—1. Cystic sarcoma of breast. 2. Three specimens of cancer of liver. 3. “Uterine Hydatids.” 4. Large fibroid tumour of uterus. 5. Viscera from a case of primary intra-thoracic cancer. 6. Intra-cranial tumour. 7. Coloured cast of cut throat. 8. Diseased heart. 9. Drawing of fundus oculi. 10. Specimen of Jaborandi.

PATIENT EXHIBITED.

Dr. ARNISON—Case of Staphyloraphy.

Mr. H. E. ARMSTRONG said, as a sanitarian, he thought fifteen minutes was too short a time for the discussion on the prevalent diseases of the district. He hoped such an arrangement would not be always adhered to.

The PRESIDENT stated that the Committee almost unanimously were of opinion that it was necessary to limit the discussion on the

prevalent diseases of the district. The proposed alteration was merely an addition to the standing orders, which could be suspended at any meeting by a vote of the majority.

Dr. ARMSTRONG moved the adoption of the report, including the proposed additions to the standing orders.

The motion was seconded by Mr. H. E. ARMSTRONG, and carried unanimously.

On the motion of Dr. BURNUP, seconded by Dr. PHILIPSON, Mr. Dodd was re-appointed paid Secretary for the ensuing year.

Dr. Arnison and Dr. Armstrong were appointed scrutineers of the ballot papers for the election of officers.

On the motion of Dr. PHILIPSON, seconded by Dr. BURNUP, a vote of thanks was awarded to the Scrutineers (Drs. Arnison and Armstrong).

STANDING ORDERS OF THE NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

1. That the chair be taken punctually at seven o'clock.
2. That the election of proposed members be the first business of the evening.
3. That each member be elected separately.
4. That the next business be the proposal of new members.
5. That the discussion on the prevalent diseases of the district then take place, and shall not exceed fifteen minutes.
6. That the pathological specimens be verbally and briefly described.
7. That the remainder of the evening be devoted to the reading and discussion of papers.
8. That all members rise to speak and address the chairman, and that no member shall speak twice on the same subject, and that the authors of papers have the right to reply.
9. To avoid confusion, and to afford equal advantage to all, members are requested to keep their seats during the exhibition of specimens.
10. That no private conversation interfering with the business of the meetings be allowed.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE first monthly meeting of the Society was held in the Library of the Infirmary, on October 14th, 1875; the President (Mr. Broadbent) in the chair.

The PRESIDENT said, before commencing the ordinary business, I beg to return you my grateful thanks for your kindness in re-electing me your president. I assure you I feel deeply the honour you have done me. I can only express the hope that our future meetings may be as pleasant and as profitable as those of the last session.

The following gentlemen were elected members of the Society:—

- Robert Anderson, M.D. (Edin.), Cramlington.
- C. Wilson, M.R.C.S., Cullercoats.
- J. Mitchell Monteith, M.B. (Edin.), Newcastle.
- F. Barrow, M.R.C.S., Morpeth.
- George Bolton, M.R.C.S., Sunderland.
- Robert Barker, M.R.C.S., L.R.C.P., Sunderland.
- W. L. Hunter, M.B., Castle Eden.
- George Welford, jun., M.R.C.S., Sunderland.

The following gentlemen were proposed for election:—

- William Lionel Winship, M.R.C.S., Newcastle.
- Auburn Wilkinson, M.R.C.S., Tynemouth.
- William C. Blackett, M.R.C.S., L.S.A., Durham.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG read the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, from March to September, 1875, inclusive.

	ADMISSIONS.							DEATHS.						
	March.	April.	May.	June.	July.	August.	Sept.	Total.	March.	April.	May.	June.	Sept.	Total.
Typhus	21	5	11	5	4	1	2	49	3	3	2	1	1	10
Enteric Fever	3	1	...	1	...	3	3	11	2	1	...	...	...	3
Continued Fever ...	1	2	...	...	...	...	...	3	...	1	...	...	...	1
Febricula .....	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Scarlet Fever.....	...	2	1	...	1	...	...	4	...	...	...	...	...	...
Pneumonia.....	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Herpes Catarrhalis	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Erysipelas .....	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Smallpox (vaccin ^d)	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Intestinal Disease...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Totals.....	26	12	13	8	5	4	5	73	5	5	2	1	1	14

The type of Typhus has been severe, the mortality, as appears by the above figures, having been above 20 per cent. The average stay in hospital of the fatal cases was a fraction over six days each. One case died $3\frac{1}{2}$ hours after admission, and two on the second day after admission.

The locality of Typhus and numbers affected are as follows :— Lime Street, Ouseburn, 2 cases ; Sandgate, 1 ; Cherry's Entry, Pandon, 1 ; No. 8, Spicer Lane, 8 cases from the same family ; Mount Pleasant, 2 ; Heath's Yard, 2 ; 122, Pilgrim Street, 2 ; Dogleap Stairs, 1 ; Vagrant Ward, 3 ; 13, Back Row, 1 ; 15, Back Row, 3 ; Zion Court, 1 ; Christie's Buildings, Gallowgate, 1 ; Factory Yard, Gallowgate, 1 ; Percy Court, 2 ; Fever Hospital (nurses, &c.), 3 ; Stone Street, 2 ; Ponteland Terrace, 1 ; Sunderland Street, 2 ; Elswick East Terrace, 1 ; 117, Blandford Street, 5 cases from the same family ; Tyneside Terrace, 1 ; Workhouse, 3 cases.

Two of the cases of Typhus presented during convalescence the somewhat unusual complication of Thrombosis. Both were females,

one aged 43, the other 17 years. Each had had a severe attack of fever, characterised by shouting delirium and subsequent marked prostration. The left lower extremity was affected in each case. In the younger patient, the leg and ham became painful on the thirtieth day from the beginning of the fever. In the older woman, the exact day cannot be given, as the duration of the fever before admission was not known. In each case, pain was one of the first symptoms ; in each there was early swelling and discolouration of the limb ; in the elder patient the entire surface was mottled, and of a dark brownish-blue hue, which remained for several days, and then disappeared slowly. Pulsation was found to be absent in the left femoral, popliteal, and tibial arteries of the elder patient, and did not return to the femoral until eleven days afterwards. In the younger woman, pulsation ceased gradually, but did not become quite imperceptible till the fourth day of Thrombosis, and was again felt on the ninth day. The elder woman was not able to walk unaided until the twenty-sixth day after her limb was first affected ; the younger was discharged, with a weak limb, but almost well, on the fourteenth day.

Of the fatal cases of Enteric Fever, the average stay in hospital was less than six days each.

The case of Intestinal disease was sent to hospital from the borough prison. The patient had been ill upwards of five weeks, and was reported to have had Enteric Fever in that institution.

The PRESIDENT said, for some time past his district had been very healthy. There had not been an epidemic for a long time.

PATHOLOGICAL SPECIMENS.

Dr. PAGE exhibited a beautiful specimen of abdominal aneurism, and said : This specimen was taken from the body of a man, 32 years of age, a clerk, who had symptoms for about a year before his death. The origin of the disease was referred to a strain. The aneurism is a sacculated one springing from the abdominal aorta at its very commencement, and involving the cœliac axis. Death arose from the bursting of the middle sac, which is tender, having the thinnest wall. As in the case of fatal bleeding from a branch of the superior mesenteric artery, which I brought before the Society last year, death was preceded by convulsions. The blood was effused behind the peritoneum. The arteries are in a state of atheroma. There were no indications of the man having suffered from syphilis, though he was known to have lived a somewhat fast life. From the situation of the disease, it is obvious no attempt to treat it could have been made successfully.

Dr. GIBB said he had seen the case during life, and had sent it to Dr. William Murray. Dr. Murray carefully examined the patient under chloroform, and found that the sac extended high up in the abdomen, almost as high as the diaphragm. This was a case in which the administration of chloroform for diagnostic purposes was not only justifiable, but called for. It was impossible, without the use of an anesthetic, to ascertain the exact extent of the tumour.

Dr. PHILIPSON presented a spleen and kidneys exemplifying the condition of lardaceous or waxy degeneration. From the same case, also, the heart, in which the mitral valves were studded with fibrinous vegetations. He stated that the patient, who was a seaman, aged 26, had been under his care in the Newcastle-upon-Tyne Infirmary, and at the time of admission was suffering from dysenteric diarrhoea, which had then lasted four months, and which had increased in severity, previous to death by exhaustion. The spleen was considerably enlarged, and, upon section, after the application of a solution of iodine, became of a dark brown colour, mottled with greyish semi-pellucid spots, giving to the organ the appearance of the "boiled sago spleen," the malpighian corpuscles looking like "sago grains" scattered through the tissue. In addition, there were larger masses, yellowish-white in colour, soft in their centre, wedge-shaped and triangular. These masses were regarded as "embolic" in nature, and due to minute particles of fibrin having become detached from the mitral valve, carried in the arterial circulation, and finally arrested in branches of the splenic artery. The kidneys were very large; the left weighed 1 lb. 3 oz., and the right 1 lb. 2 oz., and upon section, after the application of a solution of iodine, became deeply stained, and small lustrous, translucent bodies appeared, the evidence of the waxy degeneration. The liver also exhibited the same appearance, but to a much smaller extent than the spleen and the kidneys. The supra-renal capsules, lymphatic and bronchial glands, were not enlarged. The intestines, especially the large, were congested. Dr. Philipson said that lardaceous or waxy degeneration was generally found to be associated with a cachexia supervening upon purulent discharge from osseous disease or constitutional syphilis. In the present case, neither condition had existed, but great debility of system, consequent upon prolonged diarrhoea, dysenteric in character, which was of much interest.

Dr. GIBSON inquired of Dr. Philipson, whether there was any symptom or sign peculiar to the condition of waxy degeneration?

Dr. PHILIPSON replied that, in the case recounted, there had been albumen in the urine, but no casts of the uriniferous tubercles, and that there were no symptoms or signs distinctive of the

morbid state, its existence only being revealed upon *post-mortem* examination.

Dr. PHILIPSON presented a second specimen of diseased heart, in which the mitral valves were very rigid and much thickened, a condition which would not only impede the circulation, but, in addition, be productive of regurgitation.

Dr. PHILIPSON showed a specimen of aneurism of the ascending portion of the thoracic aorta. The patient had been a coal miner, was 50 years of age, and had been able to continue at his employment up to two months before his admission into the Newcastle-upon-Tyne Infirmary, which took place on October 7th, 1875. He complained of great oppression within the chest, and of a feeling of suffocation. Upon examination, it was found that there was distinct pulsation in the right side of the chest, visible to the eye, and perceptible to the hand, which pulsation was independent of the heart, and accompanied with a vibratile thrill. At the site of the pulsation, there was increased resistance and dulness upon percussion, and a loud grating murmur was heard upon auscultation. The head, face, neck, upper part of the trunk, and both upper extremities, were swollen and oedematous. The peculiar spongy, elastic fulness of the base of the neck, looking like a "collar of flesh," was very marked, and, together with the physical signs mentioned, lead to the diagnosis of aneurism of the ascending portion of the thoracic aorta, the superior vena cava being compressed by the sac, and causing the capillary turgescence and oedema. The difficulty of breathing increased, and the man became daily more exhausted, and died from gradual asthenia on October 11th. At the *post-mortem* examination, which was made on the following day, there was displayed an aneurism of about the size of a small melon, situated at the ascending portion of the thoracic aorta, compressing the superior vena cava, containing a dark clot, but no laminated fibrin, and with an opening of fully two inches in diameter, communicating with the aorta.

Dr. BEATSON exhibited a specimen of epithelioma of the hand, removed from a patient aged 75. The disease had existed for one year, and had been treated by caustics without any benefit. The patient was anxious to have the hand removed, as he suffered a good deal of pain in it, and as the discharge was very offensive. The axillary lymphatic glands were beginning to enlarge and become tender. The hand was removed on July 29, just above the wrist, by the modified circular operation. The stump was quite healed in two weeks, and the patient left the hospital improved in health. The operation was done anti-septically, and the patient suffered no constitutional disturbance. There was never any suppuration nor odour present in the wound.

Dr. MURPHY exhibited a large tumour of the breast, and said it was a well-marked example of schirrus cancer. The patient was 35 years of age, unmarried. There was no hereditary history of cancer. She had enjoyed good health until three years ago, when a small tumour appeared on the outer side of the right breast. The tumour was at first moveable and painless. It gradually became larger, involved the whole breast, causing marked contraction of the nipple. At the time of her admission to the Sunderland Infirmary it was painful on pressure. It was removed on the 19th September, under anti-septic precautions. The wound healed without a particle of pus. The constitutional symptoms after the operation were nil, the temperature never rising above 101° Fah. Dr. Murphy thought that after operations for cancer the wound frequently heals very rapidly, owing possibly to the increased vascularity of the parts.

Dr. BYROM BRAMWELL exhibited—1. Diseased vertebræ, showing an advanced stage of carious disease. The specimen was chiefly interesting, from the fact that the spinal canal was opened into, the membranes destroyed, the spinal cord passing, as it were, through the middle of a stinking abscess, yet there was no paralysis of the parts below the seat of the lesion.

2. A tumour, the size of a small egg, situated on the outside of the heart. The growth sprang from the left ventricle, and was closely adherent to the muscular structure. It consisted of irregular-shaped cells, with nucli and nucleoli. No embolism was found. The patient died suddenly a fortnight after confinement.

3. Hydatid cyst from the liver—The patient was a boy who had been in the Newcastle Infirmary, under Dr. Charlton. The cyst had been tapped, and the boy went out relieved. Suppuration subsequently took place and opened into the chest. The patient died from exhaustion—the result of the long-continued discharge. Dr. Hope, who attended the boy, was unable to find any hooklets in the matter expectorated. To Dr. Hope and to Dr. Page, who assisted Dr. Hope at the *post-mortem*, Dr. Bramwell was indebted for the specimen.

4. Dr. BRAMWELL also showed several diagrams and microscopical preparations, illustrating the minute structure of the cyst contents, and said : In order that the microscopical preparations may be clearly understood, it will be necessary for me briefly to describe to you the development of the hydatid within the human body. A small tapeworm, the *tænia echinococcus*, infests the upper part of the small intestine of the dog. It is represented in diagram No. 1 (greatly magnified). Its length is about a quarter of an inch. It consists of four segments only, the last of which is very much larger than the others. The last segment contains the ova. These, or the

six-hooked embryo, which is developed from them, get into the human stomach. The embryo finds its way into some other organ, most frequently into the liver. The exact mode in which it gets into the liver has not been definitely ascertained ; some observers say it is carried by the circulation through the portal vein, others say it makes its way through the bile ducts, others again through the lymphatics. But be that as it may, the subsequent course of development is as follows. Its hooks drop off, its caudal segment becomes very greatly developed and forms a cyst varying in size from a pea to a man's head. This is the cyst which I have already shown to you. The wall of the cyst consists of two structures, an Ecto-cyst or outer membrane, which is thick, laminated, hyaline, and structure-less, and an Endo-cyst or inner membrane, which is thin and delicate. In addition to those two proper membranes which we find in all hydatid cysts, there is an external fibrous membrane which is derived from the fibrous tissue of the organ in which the hydatid develops. This fibrous capsule is always present except in the brain. Outside all is the proper structure of the organ in which the hydatid is developed. You see these various points illustrated in diagram No. 2. If the Endo-cyst or delicate inner membrane be carefully examined, minute opaque yellow spots are here and there to be seen ; they are about the size of pin heads. On carefully examining these microscopically, we see that they are composed of an elevation of the Endo-cyst, and that they contain a central cavity in which the scolices or tænia heads are contained. These brood-capsules, for that is the name which has been given to them, arise as simple elevations from the Endo-cyst, a cavity forms in their interior, from the sides of this cavity are developed the tænia heads, or scolices, as they are called. These scolices are quite microscopic in size ; they are represented in diagram No. 3. You will see that they consist of a body which is divided by a constriction into an anterior and posterior part ; the anterior part is called the head. The body is attached by a pedicle, which is sometimes of considerable length, to the interior of the brood-capsule. The head is surrounded at its free extremity by a row of minute hooklets. These hooklets are of very definite shape, and are of great importance clinically, for we know that if we find them in any discharge, we have to do with hydatid disease. On the head are situated four suckers ; in the body are to be seen numerous round or oval particles, which generally consist of carbonate of lime, and which are called "calcareous particles." The scolex can draw in its head. It then assumes the form represented in diagram No. 4.

These, then, are the essential features of an hydatid cyst. It may be, and often is, more complicated still. We generally find secondary cysts within the mother cyst. The secondary cysts are

called daughter cysts. Sometimes there are granddaughter cysts within the daughter cysts. Within the secondary or tertiary cyst, as the case may be, the brood-capsules containing the scolices are developed. You will, I think, see most of the points I have mentioned illustrated under the microscopes. In no one preparation are all seen; for the cyst from which I obtained these preparations was in a state of suppuration, and the scolices were dead.

Under the first microscope you will see scolices with the head protruded. In the second preparation the scolex has the head retracted. In the third, the calcareous particles are each seen deeply stained with carmine. In the fourth a sucker is seen. In the fifth, a ring of hooklets.

Mr. GOWANS showed a specimen of so-called "Uterine Hydatids," and said the specimen was not a true hydatid, such as Dr. Bramwell had just described, but it consisted of the chorion which had undergone vesicular degeneration. The patient was 27 years of age. She had been married one year and seven months, but had not had any family. Four and a half months ago menstruation ceased, and the usual symptoms of pregnancy appeared. Three weeks ago she began to lose blood per vaginam. When first seen by Mr. Gowans, she was blanched and collapsed; the bed was soaked with blood; the abdomen was considerably enlarged, the tumour extending upwards to a point two inches above the umbilicus. On vaginal examination, the os was found to be sufficiently large to admit the introduction of two fingers. A soft mass was found presenting. The vagina was plugged, a full dose of ergot was administered, and in the course of an hour a large hydatid mole was expelled. The patient was doing well. Mr. Gowans remarked that the formation of the new growth had not been definitely settled. All authorities, however, are agreed in thinking there is cystic degeneration of the villi of the chorion. On microscopical examination, the walls of the vesicles were seen to be studded with nucleated corpuscles and free nuclei.

EXHIBITION OF PATIENTS.

Dr. BYROM BRAMWELL introduced the following patients:—

1. A man, *aet.* 22 years, suffering from progressive muscular atrophy in its first stage, the atrophy being confined to the muscles of the hands and forearms. The degeneration had commenced eighteen months ago in the ball of the left thumb. It had then involved the interossei of the same hand. The right hand next became affected. The patient was a pitman. His general condition was that of perfect health: the muscles of the body generally, especially the biceps, were remarkably well developed.

2. A man, æt. 27 years, suffering from the same disease in its most advanced condition.

Dr. BRAMWELL said, through the kindness of the senior physician to the Infirmary, his colleague, Dr. Embleton, he was able to exhibit this interesting case to the Society. The patient was, like the last, a pitman. He had only been ill seven months. He was now unable to walk or stand; he could move his arms in an uncertain kind of way, but could not feed himself. The muscles of both extremities were in an extreme state of atrophy, the muscles of the arms and thighs being especially affected. The wasted muscles still responded to electricity. In this case the disease had commenced in the ball of the left thumb. The patient's general condition was good; when sitting he felt as well as he had ever done in his life. These two cases were very interesting. In neither was there any hereditary history of similar disease. In the second, there was commencing grey atrophy of the optic disc. This fact was especially important, for it went to show the nervous origin of the disease.

3. Case of Empyema, which, after having been twice tapped by means of the aspirator, had been treated by a free incision, and the introduction of a drainage tube under antiseptic precautions. The operation was performed by Dr. Mickle, and had been followed by marked relief. There has not been the slightest constitutional disturbance, the patient had gained 8 lbs. in weight, and felt in every way well. At each tapping, 98 ounces of pus had been evacuated.

Dr. ARNISON exhibited a patient on whom he had performed the operation of staphyloraphy, on the 5th inst. He stated that it was the youngest patient he had as yet operated upon. The boy was 4 years of age, and had scarcely begun to talk. The cleft was not complete, and did not include the alveolar process. The operation was designed to close only the posterior part of the cleft, and had been perfectly successful, union having taken place to the very point of the uvula, which was now pendulous in the middle. Dr. Arnison preferred closing only the posterior part of the cleft at the first operation. He had had better success in his operations when he had adopted this plan, which he attributed to the nervous and vascular supply being less interfered with, and union being therefore more likely to take place, than when the whole cleft was closed by one operation. When the posterior part of the cleft was fairly closed, it was comparatively easy to close the anterior part, for there was no muscular action to interfere with union, and the closed posterior part formed a good basis of support, and furnished vascular supply, which he thought largely contributed to the success of the second operation.

STRAPPING THE CHEST IN A CASE OF ABSCESS AFTER PLEURISY.

By T. F. HOPGOOD, M.R.C.S.

MR. PRESIDENT AND GENTLEMEN,—The subject I beg to bring before your notice is that of strapping the chest, thereby limiting the movements of the chest wall, and expansion of the lung. I must apologise for not having more than one case to bring before you, and this in an imperfect manner; but the result was so good, and the relief so immediate, that I believe this treatment should be more generally adopted.

Rest plays an important part in the treatment of all inflamed parts, as is seen in cases of inflammation of the joints, eye, and brain, and it is nothing but right that we should apply rest to an inflamed pleura, and expect to receive benefit thereby. If rest be needful for an inflamed surface, rest would also be desirable for a suppurating one, and it was in this stage of the disease in which I used it for my patient. The history of the case was as follows:—

I was called in to see the patient, a young healthy looking woman of 29 years of age, suffering from intense pain upon breathing in the axillary region, pain also upon pressure between the ribs in the same spot, this spot being limited to the size of a two-shilling piece. No friction sound could be heard, but if, as it must have been slight, it was covered by the patient crying out every time she inspired. Next morning I saw her again, when there was distinct friction sound over a space of about 3 inches square. The area of friction sound increased until effusion took place. After about a week from the time of the chest being filled with fluid, I was sent for in a hurry, on account of severe pain in the side, and now there were distinct signs of pericarditis, the to-and-fro movements being accompanied by distinct friction; then followed effusion into the pericardium, accompanied with irregular action of the heart, and now and then fainting fits. It became now a question in my own mind as to strapping the chest, but as friction sound had again made its appearance, I determined to wait, and for a time the symptoms improved, when pleurisy began on the opposite side, but ceased in a day or two. From this time the chest cleared, with the exception of a portion at the upper and anterior part, just under the clavicle. Over this portion of the chest wall was the remains of an old scald. The skin in this part became very thin, in fact so thin that I was afraid it would give way, and there was distinct fluctuation. I may state that the temperature had an evening rise and a morning fall of nearly 2 degrees, that of evening being as high as 104 once or twice. One evening when I arrived home from one of these meetings, I was sent for in a hurry, and I

found her suffering from collapse. The abscess had broken internally into one of the bronchial tubes, and about two pints of blood and pus had been vomited. Upon examination of the chest, where had been previous dulness, there was now a cavity, as shown by the voice sound and cavernous breathing.

Upon visiting the patient from day to day there was dulness, or otherwise, according to the amount of fluid present, but it could be emptied by turning the patient on the right side. As soon as this position was obtained, a nasty cough came on, which lasted until the cavity was emptied, each cough caused the expectoration of about $\frac{1}{2}$ an ounce of pus. This continued for six weeks or two months, and my patient was gradually becoming weaker and weaker; hectic was setting in, and I could see that, unless something more were done, I should soon have another addition to my list of deaths. Quinine, iron, cod liver oil, wine, brandy, eggs, and good beef-tea, with an unlimited amount of milk, were taken, but with little or no gain of strength. The question which arose in my mind was whether I should open the abscess freely externally, and then wash it out with iodine; but before doing this, I thought I would give it the chance of rest by strapping the chest firmly by means of plaster, which I did accordingly.

I applied strapping round the entire side from the spine to the sternum, and over the shoulder, and then applied a bandage, moderately tight, round the chest.

To my great delight, the next day the patient was decidedly improved; the temperature had fallen, the cough was very much less, and the patient had passed a good night. This continued, the quantity of secretion having fallen from the time of strapping, and each day became less and less.

The strapping required changing about every third day, as it became loose; and, upon measuring the chest each time, it was found to be due in a great measure to falling in of the chest wall, until there was a difference of $2\frac{1}{2}$ inches in the two sides, or $3\frac{1}{2}$ inches difference from the time of beginning to use rest and pressure. This treatment was used for two months, when she had sufficiently recovered to go into the country, there being present at times a cavity, but no pus secreted, very little cough, and a great improvement in health generally.

I saw this patient a few weeks ago, and her present condition is as follows:—To all appearance, she looks in good health, but still thin, but this she has always been. She complains of no difficulty in breathing, and can walk or run without any discomfort.

Upon examination of chest, there is slight flattening under the clavicle, otherwise the sides appear equal. By measurement, the two sides are nearly equal. Air enters the whole of the chest, and, with the exception of harsh breathing in the supra and infra

clavicular regions, the sounds are normal. The skin over the seat of abscess has become thickened, and, had it not been for the remains of the scald, nothing abnormal is to be detected.

Although this is only a single case, I think you will agree with me that the marked change in the symptoms from the time of applying the plaster cannot be put down to any other cause than the application of the treatment of rest by the limitation of movement of the lung and chest walls.

Mr. JEPSON said he agreed with the reader of the paper, that rest is a most invaluable method of treatment in such cases. Mr. Hilton, of Guy's Hospital, had written a most important work on the subject, in which were recorded many cases of fracture of the ribs, abscesses, etc., in which the treatment by strapping the chest had been most successful.

Dr. BYROM BRAMWELL read a paper, entitled "Report on a case of Hydatid Disease of the Liver, treated by a free opening under anti-septic precautions."

This paper will appear in the next number of the Transactions.

Mr. MORGAN's paper on "Epithelioma" was deferred until the next meeting.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE second monthly meeting of the Society was held in the Library of the Infirmary, on November 11th, 1875; the President (Mr. Broadbent) in the chair.

The following gentlemen were elected members of the Society—

William Lionel Winship, M.R.C.S., Newcastle.

Auburn Wilkinson, M.R.C.S., Tynemouth.

William C. Blackett, M.R.C.S., L.S.A., Durham.

The following gentlemen were proposed for election :—

Duncan Stewart, L.R.C.P., Hexham.

Luke Blumer, M.D., Sunderland.

John Russell Sutherland, L.R.C.P., Edin., West Rainton.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of October, 1875.

	ADMITTED.	DIED.
Enteric Fever ...	1	—
Broncho-Pneumonia after Enteric Fever ...	1	1
Typhus ...	1	—
Total ...	3	1

The case of Broncho-Pneumonia was sent to Hospital as a case of relapse of Enteric Fever. This and the case of Enteric Fever were admitted from St. Peter's. The case of Typhus was admitted from Dove's Court, Northumberland Street.

Mr. H. E. ARMSTRONG said there was very little sickness in his district.

Mr. JEPSON said, through the kindness of Dr. Mackay, of Crook, he was enabled to bring before the notice of the Society a brief account of an epidemic of Typhoid Fever which had prevailed at Hedley Hill Colliery since August last. Forty cases had occurred in a row of one hundred houses. The average duration of each case was about four weeks. The cause of the epidemic seemed to be the percolation into the houses of impure water. The ash pits and privies of the village were on a hill side, just above the houses. The water from the hill side made its way through the ash pits, &c.,

into the houses. The type of fever was mild. All the cases had recovered. The treatment consisted in the administration of milk diet and acidulated water. Nitric acid was used where the diarrhoea was profuse. Stimulants had been sparingly resorted to.

Dr. PEART said no mention had been made of the channel through which the poison got into the system. Was the water drunk, or did the poison affect the patients through the air?

Mr. JEPSON said the disease seemed to be caused by the inhalation of the effluvia, and not by the drinking of the water.

PATHOLOGICAL TRAY.

Mr. BROADBENT showed a specimen of cancer of the lung. The patient was a boy twelve years of age. Eighteen months before his death amputation through the thigh had been performed by Mr. Broadbent for malignant disease. The operation was apparently successful; the patient's general health improved, and he went to school. He was suddenly seized with chest symptoms, cough and spasmodic dyspnœa. There was never any pain. The temperature, which was taken night and morning, never rose above 98° Fah. The patient died asphyxiated a month after the appearance of the chest symptoms. At the *post-mortem* both lungs were found to be adherent. Nodules of soft cancer were scattered here and there through the pulmonary tissue. There were several large pedunculated masses attached to the pleura. Dr. Bramwell had examined the specimen, and was of opinion that the pedunculated masses were myeloid in character.

Dr. EMBLETON showed a microscopical preparation of the favus fungus ("Achorion Schönleinii"), and said: The spores resembled those of the yeast plant and of the *Torula Diabetica*. In the specimen under the microscope many of the spores could be seen; some of them were single, others in rows forming slender filaments, and others again in masses. The specimen was taken from a mouse. The fact that the mouse suffers from favus is known to authors. It is supposed that the mouse gives it to the cat, and the cat to the children of the family.

Dr. ARNISON exhibited—1. A large fatty tumour of twenty years growth, weighing $5\frac{1}{2}$ lbs. He had removed it four weeks ago from the left shoulder of a woman 67 years of age. It was very vascular. The bleeding during the operation was very copious, and difficult to arrest. The tumour was freely moveable, its only connection being the fibrous tissue on the spine of the scapula. The patient had made a good recovery.

2. A tumour the size of a large cocoa nut, the growth of sixteen years. It sprang from the right parotid region. The tumour

consisted of large sebaceous cysts and fibrous tissue ; the skin over it had ulcerated, opening up the cysts, and causing decomposition and foetor. This, together with its great weight, caused so much discomfort and annoyance that the patient, a man of 54 years, was anxious to have it removed. The operation was not attended with much difficulty, there being no deep attachments. It was done two days ago, and, so far, the progress of the case was satisfactory.

Dr. PAGE exhibited the thoracic organs of a woman who was killed by a stab in the chest, and said : This heart and portion of left lung was removed from the body of a woman, lately stabbed to death in Newcastle by her husband. Eight wounds were found upon the body, two of which transfix the lungs. A large pointed knife, such as is used in provision shops for cutting bacon, was the instrument employed. A little to the outside of the left nipple was a wound about one inch and a quarter in length ; the fourth rib was completely divided by a clean cut ; the lung, as you see, transfix, and a large opening made into the left auricle, the point of the knife reaching as far as the septum between the auricles. Death must have been almost instantaneous. The knife was a blunt one, and must have been used with very great force, to have inflicted such an injury, the partial result of which I now show you.

Mr. MORGAN showed the parts from a fatal case of intersusception, and said : The patient was an infant ten months old ; he was a strong, vigorous child, and had been breast-fed. Two days before I saw him, he had passed a motion with much straining ; the motion contained a streak or two of blood. After this, until the date of death, there was no passage. When I saw him, he was restless, vomiting the milk as soon as it was swallowed. The bowel was protruded six inches from the anus. The protrusion was with difficulty reduced, and the point of invagination could be felt by the finger high np. It exactly resembled the os uteri. Attempts at reduction failed, and he died convulsed on the third day.

Dr. PAGE asked whether any operative procedure had been thought of, and said : Last week, I attended a meeting of the Medico Chirurgical Society of Leeds, at which a patient was shown on whom Mr. Jessop had performed the operation of gastro-tomy. The case was one of intersusception. All means of reduction having failed, Mr. Jessop opened the abdomen, found the point of obstruction, and reduced the invagination. The patient had done well.

Mr. MORGAN said : The question of operative procedure had occurred to him. The case was a favourable one ; the patient, although very young, had been previously healthy, and the point

of constriction was known. Had it not been for the sudden onset of convulsions, an operation would have been performed.

Dr. BYROM BRAMWELL showed—

1. A specimen of the Atheroma of the base of the aorta. The aortic valves were thickened, the sinuses of valsalva much dilated.

2. Fusiform dilatation of the thoracic aorta. The dilatation involved the end of the transverse and the descending portions of the vessel. The interior of the dilatation was covered with laminated fibrine. The patient died of heart disease. The dilatation did not give rise to any symptoms during life.

3. A specimen of pulmonary apoplexy. The right lung was almost completely destroyed by numerous apoplexies. The extravasations were very characteristic, being situated near the surface of the organ, wedge-shaped, and of a reddish-brown colour, forming a marked contrast, both in colour and consistence, to the surrounding pulmonary structure.

4. A Renal Calculus, the size of a large cherry, embedded in the substance of the left kidney. The calculus was irregular in shape; externally of a yellowish-brown colour, internally black. It did not give rise to any symptoms during life.

5. A beautiful specimen of multilocular Ovarian Cyst. The tumour was the size of an orange, and was made up of innumerable cysts, varying in size from a pea to a marble. It involved the whole of the right ovary; the left ovary was also affected, but to a less extent. There were also a few small cysts in the broad ligament.

6. An intra-cranial tumour. The growth, which was the size of a small plum, sprang from the posterior fossa on the left side, just under the tentorium cerebelli. It was apparently attached to the dura mater, and not to the bone. It was quite sound; its surface smooth. It had caused a deep depression in the left lobe of the cerebellum. There were no signs of inflammation. The patient from whom it was removed was a woman, *aet.* 64. She was admitted to the Newcastle Infirmary, under Dr. Bramwell, three weeks before her death, in a semi-comatose condition. She had fallen down stairs the previous day. No further history than this could be ascertained. On admission, there was no definite paralysis of any part; she was, however, unable to stand. She could give no account of herself, nor of her complaints. The external appearance of the eyes was natural. On ophthalmoscopic examination, the right disc was markedly redder than the left, but there was no oedema, the edges of the disc being well defined. She frequently put her hand to her head, as if in pain, and often vomited. She died suddenly one night in a convulsion fit, the right side being apparently most affected.

When seen by Dr. Beatson, she was dead. The right hand and foot were strongly inverted. At the *post-mortem*, the tumour already described was found, and, in addition, the remains of a small apoplexy, just outside the right corpus striatum. The appearances of the clot showed that it was not quite recent, being apparently of a few weeks' duration. The arteries of the brain were very atheromatous. The tumour had evidently been of slow growth. The absence of any swelling of the optic discs, and of any deviation of the eyes, was very interesting. It was most unfortunate that the patient could give no account of herself.

Dr. McDOWALL said: I have seen several cases of tumour in the region of the cerebellum which were not manifested during life. All investigators of nervous disease have met with the same uncertainty. I am not, therefore, surprised to find an absence of eye symptoms in this case. I was fortunate enough to assist Professor Ferrier in his first series of experiments. I can vouch for the care with which they were performed, and for the absolute certainty of the results.

Dr. BRAMWELL also showed, for Dr. Manson, of Howdon-le-Wear, a hand amputated two days previously. The patient was 75 years of age. He had suffered for five years from the disease, which was epithelial cancer.

EXHIBITION OF PATIENTS.

Dr. ARNISON showed a man, 20 years of age, on whom he had, five weeks ago, performed amputation, through the knee joint, for a railway accident, and said:—This mode of amputation at one time fell into disuse; and a writer so recent as Miller, of Edinburgh, in 1852, says: “Latterly this operation has been revived. . . . The operation is easily enough accomplished, but experience seems to have unequivocally decided on this revival unfavourably.” Even yet there is great difference amongst surgeons as to the method of operating: as to whether the cartilage should be removed or left; whether the condyles should be sliced or left untouched; whether the patella should be left or removed, &c. In this case, the nature of the injury confined me to a moderately long anterior and a short posterior flap. A skin flap was raised from the front, not including the patella; the joint was opened and the posterior flap made with the knife introduced through the joint. The operation and after-dressings were done under antiseptic precautions. The wound healed by primary union, leaving a stump which I think it would be difficult to beat either for beauty or promise of utility. I can not conclude without adding my most emphatic testimony in favour of the antiseptic treatment when properly carried out, and I speak

from my own experience of this Hospital, before and after the introduction of "Lister's Method" by Dr. Beatson, to whom I give great credit in this matter. In my opinion, the details which are made so much of in London and elsewhere become matters of routine. I think time is gained instead of lost. In the case just exhibited the dressings were only six times changed. Individual dressings, of course, take a little time, but the ultimate gain is great. I am also of opinion that the total cost is, for the same reason, little more than that of the ordinary methods.

Dr. BYROM BRAMWELL showed—

1. A patient suffering from locomotor ataxy. The case was very typical. The muscles of the legs were well developed, and so strong that the knee could not be flexed against the patient's will by any ordinary individual; yet he walked in the most unsteady manner, throwing out his legs in an uncertain way, and bringing the heels first to the ground.
2. A patient suffering from hemiplegia caused by a blow on the head. The injury had been received a year previously, and was due to a fall. The point struck was the left parietal bone, two inches above the ear. For three days after the receipt of the injury the patient was unconscious. When he came to himself, there was complete paralysis of the left side of the face, left arm, and left leg. The motor power had been gradually regained, but was still imperfect. The interest of the case lay in the fact that the paralysis and injury to the head were on the same side. The lesion of the nerve centres must have been caused by contre-coup. The absolute character of the paralysis, and its long duration, were in favour of a laceration of the brain tissue. This laceration must have been above the decussation of the facial nerve in the pons varolii.

Dr. EASTWOOD said the last case was very interesting. He had lately seen something similar. A patient fell forward on his nose. The accident was followed by symptoms of injury to the cerebellum.

Mr. MORGAN said he had lately seen, in consultation, two cases of hemiplegia. Both patients were women, who had been lately confined. In one case, although the patient was naturally delicate, and the hemiplegia complete, yet she quite recovered in a short time.

Mr. BROADBENT said he had seen one of the cases mentioned by Mr. Morgan. She had not yet completely recovered, but was fast getting well. She had got the use of her arm, but still dragged her leg.

Dr. BYROM BRAMWELL asked what was the cause of the hemiplegia in the two cases. Was it due to embolism? If the patients

were young, this would be a fact in favour of embolism, for extravasation of blood causing apoplexy and hemiplegia is comparatively rare in young subjects. After parturition, there is a greater tendency to the formation of emboli than in the ordinary state of health. The fact which Mr. Broadbent had mentioned was interesting. It is rare in cases of hemiplegia to find the arm recover before the leg.

Mr. GOWANS asked if there was any hysterical element in the case which recovered so quickly.

Dr. PAGE asked if the urine contained albumen.

Mr. MORGAN, in reply, stated that there was no albuminuria, no suspicion of hysteria; he himself thought the paralysis was due to embolism. He had mentioned these cases in order to get the expression of members on the subject.

REPORT OF A CASE OF HYDATIDS OF THE LIVER,

By BYROM BRAMWELL, M.B.,

PHYSICIAN AND PATHOLOGIST TO THE NEWCASTLE-ON-TYNE INFIRMARY,

MR. PRESIDENT AND GENTLEMEN.—The following case is, I think, sufficiently interesting to make it worthy of publication :—

William Otto, æt 31, a sailor, was admitted to the Newcastle-on-Tyne Infirmary on 20th May, 1875, complaining of a swelling in the right side of the abdomen.

Previous History.—The patient states that he has been a very healthy man, and was quite well three weeks ago, when he fell, striking his right side against a post. The injury was a trivial one. He felt no worse for two days. The side then became uneasy, and he noticed a swelling about the size of a hen's egg in the right side of the abdomen, just below the margin of the ribs. There was never any discoloration nor tenderness on pressure. The swelling gradually increased in size until four days ago, when it was poulticed. Under this treatment he thinks it got less. A week after the accident he spat up, while coughing, about a thimbleful of bright red blood. He has twice since spat up a similar quantity. He has not been in Iceland. Has never been much in contact with dogs. Has sailed in a steamer for the last ten years. On cross-examination, it was ascertained that he has been short of breath, on exertion only, for the last two years.

Present Condition.—His general appearance is that of good health, he is strongly built and muscular. The conjunctivæ are in places slightly yellow. The temperature is 97° Fahr.

On examining the abdomen, a marked bulging is to be seen on the right side, between the margin of the ribs and the iliac crest. The swelling is well defined, globular, and projects chiefly forwards; there is no marked fulness in the flank. The tumour is smooth on the surface, elastic to the touch; there is not the least pain nor tenderness to the touch. It is about the size of a large orange. Two veins are seen coursing over it and running up the side of the chest.

The percussion note over the swelling is absolutely dull. No distinct feeling of fluctuation can be perceived. The hydatid fremitus is not present.

The area of liver dulness is greatly enlarged, and is continuous with that of the tumour. Inferiorly it extends in the middle line to a point two inches below the xiphoid cartilage. Superiorly it is bounded by a *curved line*. The summit of the arch is in the axilla, and corresponds to the superior border of the third rib. Close to the spine and sternum it is at a lower level, corresponding to the sixth rib behind and the fourth in front. Transversely it extends over to the right side, merging with the cardiac dulness. (The exact outline of the dulness will be readily perceived by reference to the figures.)

FIG. 1.

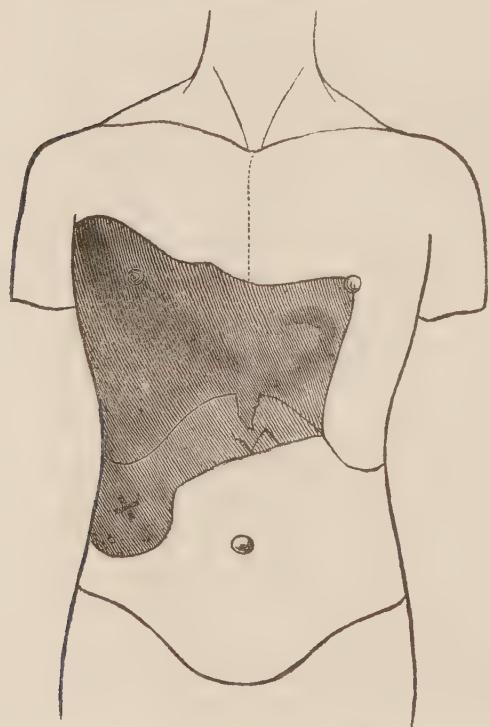
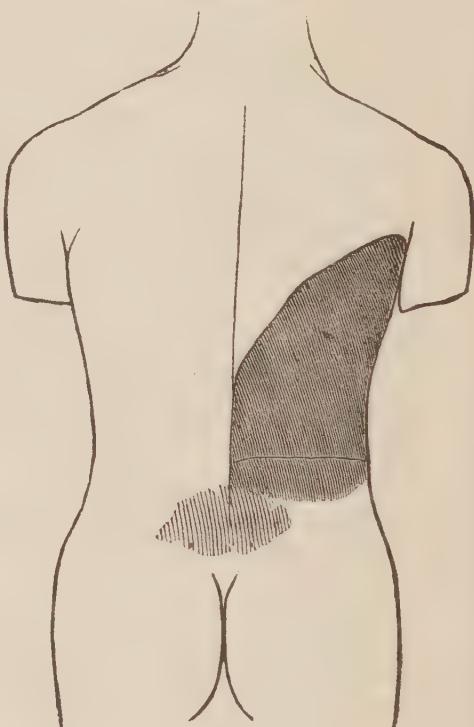


FIG. 2.



EXPLANATION OF DIAGRAM.

FIG. 1. Front of the thorax and abdomen in the case of W. Otto, showing the extent and outline of the dulness.

× Points to the spot where the cyst was punctured.

FIG. 2. Back view of the percussion dulness in the case of W. Otto, showing marked curve superiorly.

At the level of the xiphoid cartilage the right chest measures one inch more than the left, being $19\frac{1}{4}$ inches. Through the nipples the two sides are equal. There is no bulging of the intercostal spaces.

The splenic dulness is considerably increased, measuring 4×5 inches. The blood is normal.

The lower parts of the abdomen are natural. The tongue is slightly furred. The appetite poor. The bowels regular.

The urine is normal and free from bile. The patient says there has never been anything wrong with his water.

The cardiac apex beat cannot be felt when he lies on his back. When he is inclined to the left side it corresponds to the nipple. The heart sounds are quite normal. Radial pulse, 72.

The percussion note over the left chest is hyper-resonant. Over the right side above the curved line of dulness it is normal. The respiratory murmur is harsh, and the expiration prolonged. Over the dull part of the right chest, the respiratory murmur, vocal resonance, and fremitus are absent. The respirations number 18 in the minute. There is no cough nor spit.

The skin is of natural moisture, somewhat dark coloured. There has been no shivering.

The other organs are normal.

The diagnosis was hydatid disease of the liver.

On 21st May, Dr. Mickle, our Junior House-surgeon, introduced, at my request, a medium-sized canula into the most prominent part of the tumour. Forty-two ounces of clear colourless fluid were withdrawn by the aspirator. The specific gravity of the fluid was 1008. It was neutral, contained chlorides, no albumen, no sugar. A few small pieces of cartilaginous-looking tissue were suspended in it. On microscopic examination they were seen to consist of hyaline membrane—perfect scolices and detached hooklets were seen. Some of the so-called calcareous particles of the scolices were deeply stained by an ammoniacal solution of carmine.

23rd May.—The temperature rose last night to 101° Fahr. The pulse to 90. The patient seems quite well; there is no pain in the region of the cyst.

25th June.—The cyst was again tapped to-day. 42 ounces of fluid were again withdrawn. It was slightly opaque, of a greenish yellow colour, specific gravity 1011, neutral, containing a small quantity of albumen—a trace of bile. On microscopic examination, pus corpuscles, a few red blood corpuscles, and many crystals of hæmatoidine, were seen.

27th June.—The temperature rose last night to 103° Fahr. The patient had a rigor this morning. He looks ill, complains of headache and thirst; the tongue is dry. There is considerable pain

and tenderness on pressure over the cyst, but not over the rest of the abdomen.

At 11·30 a.m. one drachm of powdered jaborandi was given infused in boiling water. The skin at the time of administration was hot and dry; the tongue parched; the temperature 103° Fahr.; the pulse 114.

The effect of the drug was as follows:—At 12 a.m., temperature 103·6° Fahr., pulse 126, face flushed, sweating commencing, mouth moist. At 1 p.m., temperature 103·4° Fahr., pulse 124, sweating profuse, salivation moderate. At 3 p.m., temperature 102·8° Fahr., pulse 120, face pale, still sweating profusely. At 6 p.m., temperature 101° Fahr., pulse 96, skin still moist.

28th June.—Feels better; tongue clean and moist; no pain; had a good night; skin dry and hot. At 1·25 p.m., a drachm of jaborandi powder was again given, the temperature being 101·8° Fahr., pulse 96. At 2 p.m., temperature 103·8° Fahr., pulse 108, sweating moderate, slight salivation. At 3 p.m., temperature 104° Fahr., pulse 110, sweating profusely, has vomited. At 4 p.m., temperature 101° Fahr., pulse 107, still sweating profusely, has again vomited. At 6 p.m., temperature 99·4° Fahr., pulse 94, sweating ceased, feels much better.

30th June.—Cyst again punctured; 39 ounces of greenish-yellow fluid withdrawn.

9th July.—Again punctured; 41 ounces withdrawn. The fluid was darker coloured, and thicker than before.

16th July.—He is much worse; looks ill; has an anxious expression; has lost a great deal of flesh; is decidedly jaundiced. The tongue is dry and furred; he complains of great thirst. There is much pain and tenderness on pressure over the cyst. The abdomen is uneasy, distended, and tympanitic. He sweats profusely at night, and has several times had a slight shivering. The cyst is again full. It was determined to make an incision into the cyst. Dr. Mickle cut down upon the most prominent part of the cyst. A free opening was then made into the sac. About 40 ounces of dark-coloured, offensive, purulent fluid escaped. The cavity was syringed out with a weak solution of carbolic acid, 1 to 40. A full-sized drainage tube was introduced. The operation was performed under the strictest antiseptic precautions, the wound being dressed with gauze in the usual manner. The dressing was changed at 9 p.m.

17th July.—The patient is greatly improved. He had a good night; has eaten well; is free from pain; the temperature is sub-normal.

22nd July.—There is more discharge to-day. It is thick and slimy. The temperature has again commenced to rise; the tongue is quite clean; the patient's general condition good.

27th July.—A portion of cyst wall, measuring 2 by 2 inches, came away to-day. The discharge is very copious, thick, and slimy.

28th July.—Another portion of cyst wall discharged.

9th August.—Discharge still copious. Patient's general condition is good, but the temperature rises in the evening. Ordered ten grains of quinine, three times a day.

12th August.—Quinine to be discontinued. It has made him very deaf.

17th August.—For the last few days the evening temperature has been very high, and the patient has not felt so well. A very large portion of cyst wall came away to-day. It completely filled a large breakfast-cup; covering, when spread out, two dinner-plates. It was of a dirty green colour.

18th August.—Patient is greatly better. The temperature has remained quite stationary since yesterday. From this date recovery was steady.

13th September.—Sweating profusely at night; ordered 1·80 grain sulphate of atropia, three times a-day.

20th September.—Sweating ceased. There is now very little discharge; the tube has been several times shortened. A weak solution of iodine was to-day injected through the tube, instead of the carbolic solution.

7th October.—Patient feels quite well. The discharge is almost nil; the wound almost healed. The hepatic dulness, though very much less extensive than on his admission, is still increased. Inferiorly it corresponds to the margin of the ribs. Superiorly it reaches its highest level in the axilla, and corresponds to the superior border of the fourth rib; the splenic dulness is also still increased.

REMARKS.

The diagnosis was arrived at in the following manner:—
1st. The dulness over the lower two-thirds of the right chest was evidently due to the enlargement of the liver. Pleuritic effusion was excluded by the general condition of the patient, the previous history, and, above all, by the marked arching upwards of the superior line of dulness. 2nd. The globular elastic swelling was evidently connected with the liver, and could not, from its position, and from the absence of any history of pain, be a distended gall bladder. We had, therefore, to deal with an irregular enlargement of the liver. The patient's general condition, and the characters of the tumour, excluded malignant disease. Hepatic abscess was negatived for the same reason, and because of the absence of all pain and febrile disturbance. The enlargement was evidently, therefore, due to hydatid disease.

The history of accident was at first sight somewhat misleading. The injury, no doubt, directed the patient's attention to the part. Possibly, too, the cyst underwent some enlargement as a result of the external violence. With reference to the receipt of former injury, it is interesting to note the remarks of Dr. J. Warburton Begbie. He says—"A very curious circumstance respecting hydatid growths in man is, that they have frequently been observed to develop themselves in parts of the body which have received some or another former injury. Dr. Budd has especially noticed this, remarking—'Of the published cases of hydatids of the liver, there is a considerable proportion in which the tumour seems to have formed soon after a blow on the side, and, as was supposed, in consequence of it.' Several of the cases recorded by Frerichs had apparently an origin of this sort."*

The diagnosis having been arrived at, the treatment was next considered. There was no difficulty in deciding that operative procedure was required. The large size and the position of the cyst rendered it very liable to rupture by a blow or fall. "The presence of such a cyst is," in the words of Heller, "like the sword of Damocles, constantly threatening danger."† We know that a rupture into the peritoneum is nearly always fatal.

It is unnecessary to call attention to the mode of operative procedure which was adopted further than to say, that in any future case I would dispense with the preliminary tappings, and at once introduce the drainage-tube, using every antiseptic precaution. I see by the *Lancet* of 18th September, that a well-known French surgeon, M. Verneuil, recommends this method of procedure. The opening should be free, in order that any detached portions of cyst wall may escape. Where the cyst is not adherent to the abdominal walls, a small opening should first be made. After the formation of adhesions, this could be enlarged, and a full-sized drainage-tube introduced.

The Temperature Chart of this case is very interesting. Two days after the second tapping there was a marked rise, which continued more or less uninterruptedly until the free opening was made on 16th July. The introduction of the drainage tube was followed by a marked fall. On 21st July, there was again a rise, which continued until a portion of the cyst wall was expelled on 27th July. After the final expulsion of the cyst wall, the fall was most marked. For some days previous to 16th August, the evening temperature was very high, the large portion of cyst wall was doubtless at this time loose in the cavity of the cyst. It will be seen by reference to the chart that both jaborandi and quinine brought down the temperature. After the second dose of jaborandi,

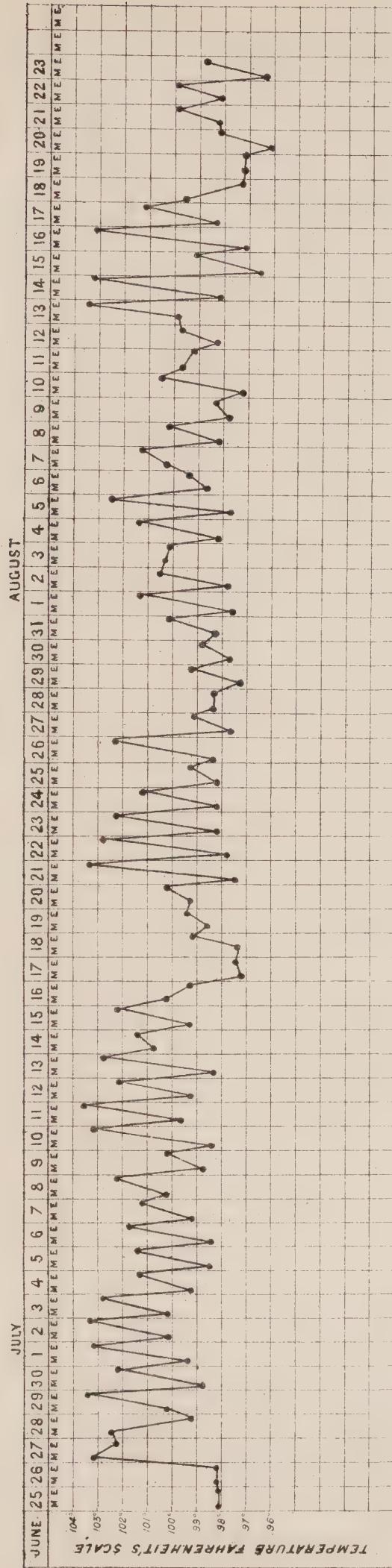
* Russell Reynolds's System of Medicine, vol. iii. p. 402.

† Ziemssen's Cyclopædia of Medicine, vol. iii. p. 578.

CHART OF TEMPERATURE.

Hydatid of Liver.

Otto.



REMARKS.

- June 25. Punctured with aspirator ; 40 ounces of slightly purulent fluid withdrawn.
 27. Severe rigor. One drachm of powder of jaborandi administered.
 28. One drachm of powder of jaborandi administered.
 30. Punctured with aspirator ; 39 ounces of thick pus withdrawn.
- July 9. Again punctured ; 40 ounces of pus withdrawn.
 16. Free opening made into cyst under strict antiseptic precautions. Very large drainage-tube inserted.
 27. Small portion of cyst-wall came away ; measured two inches by one and a half.
 29. Another small portion of cyst-wall came away.
 Aug. 18. Very large portion of cyst-wall came away.
 23. From this date temperature was normal.

there was a marked but temporary rise. An hour and a-half after the administration of the dose, the mercury had risen $2\cdot2^{\circ}$ Fah. This is quite exceptional. In most cases, from the first, there is a gradual fall. The usual well-known effects of the drug were produced. No effect on the pupil nor vision was observed. After the second dose, there was vomiting.

The effect of sulphate of atropia in controlling the nocturnal sweatings was well marked.

It is worthy of note that the patient is a sailor "Frerichs and Devaine both notice the statement, resting chiefly upon the high authority of Dr. Budd, that sailors enjoy a remarkable immunity from hydatids of the liver."* This statement was made in the time of sailing ships. It is probable that it is losing weight, for in these days of short voyages and steam, the surroundings, food, etc., of the sailor are becoming more and more on a par with those of the dweller on land. In the same proportion we may expect his immunity from hydatid disease to decrease.

It is difficult to estimate the value of the antiseptic precautions in this case. It was not a favourable one for "Lister's method," for the contents of the sac were already foetid. That the operation was followed by marked benefit cannot be doubted. It must, however, be remembered that the introduction of a large drainage-tube by relieving tension, and by affording a constant free exit to the discharge, would of itself tend in no small measure to a good result.

By reference to the note made in 7th October, it will be seen that the liver is still enlarged, possibly owing to the presence of another cyst. We have no means of ascertaining the position of this cyst, even if it do exist. Any further operative procedure is certainly contradicted.

Some of the so-called calcareous particles were deeply stained by Beale's carmine solution. This fact seems to confirm Professor Huxley's view that, in their early stage of development, these so-called calcareous particles consist of proto plasmic material.

* Russell Reynolds's System of Medicine, vol. iii. p. 401.

EPITHELIOMA,

By G. B. MORGAN.

MR. PRESIDENT AND GENTLEMEN.—When our indefatigable Secretary asked me to read a paper before the Society, I thought that, perhaps, a few cases from my own note-book might have a practical interest, even although I should not be able to bring any new facts of importance before you.

I selected Epithelial Carcinoma for two reasons—firstly, because I happened to possess a good many notes of cases of this disease; and, secondly, because surgical interference, in cases of malignant disease, is so often unattended by success, that many good surgeons decline to operate: since, they say, recurrence is the rule, and not the exception; and hence it is, therefore, I think, incumbent upon all operating surgeons to keep a record of their practice, so as fairly to balance the results, and ascertain with some degree of exactness what amount of good interference has done, and what the result has been when the disease has been left alone.

I repeat that it is not my intention to appear as the exponent of any new facts; nor shall I enter into the histology of Epithelioma; but will content myself with bringing before you a few cases illustrative of four of its characteristic features.

1st. That Epithelioma is a constitutional disease, of a malignant nature, and, when left alone, tends to a fatal termination.

2nd. That it is capable of hereditary transmission, and is interchangeable with scirrhous.

3rd. That skin or mucous surfaces can, by being subjected to long-continued irritation, take on the characteristic ulcer of Epithelioma.

4th. And, lastly, that the lymphatics do not become affected so early in this disease as in Scirrhous, Osteoid, or Encephaloma, and that, in consequence of this, Epithelioma is more amenable to surgical treatment, and operations for it are attended with a more satisfactory result.

Mr. D—, aged 46, consulted me in January of the present year. He was a tall, fine-looking man, apparently in perfect health, and was busily engaged as the manager of extensive engineering works. He complained of a sore place in his mouth, which had been there for three or four weeks. On examination, I found an ulcer, the size of a shilling, outside the last molar tooth on left lower jaw, extending from the crown of the tooth into the cheek. It had hard everted edges, and was inclined to bleed. The lymphatics were not perceptibly affected.

I told him what, in my opinion, was the nature of the sore, and also of the operation which I proposed for his relief; but the

latter appeared to my patient such a formidable matter, as indeed it was, that he preferred to place himself under the care of Dr. Turnbull, of Cheltenham, who promised to cure his disease without any cutting.

I saw nothing more of my patient till September 21st, when he again sent for me. He had just come back from Cheltenham, against the wish of his doctor, who still assured him that he could be made better, if he would continue his treatment.

I found him wasted to a skeleton, the whole cheek, the teeth and part of the bone of the lower jaw, and a portion of the integument of the throat gone; so that the movements of the tongue and pulsation of the carotid could be seen in the open wound.

He could swallow a few drops of liquid at a time, and that only when lying on his right side. Hectic was wasting him rapidly, and he had had several smart bleedings. After one of these, more copious than usual, he sank, on the 13th of October last.

A gentleman, aged 46, consulted me in August, 1874, for an ulcer of the tongue. He had always been a strong, healthy, and very active man, a hard worker, and his business necessitated great, and continuous mental strain. He had been a devoted smoker—smoking while he worked all day, and often to a late hour at night.

Under the advice of Sir James Paget, and Sir Wm. Ferguson, he had given up tobacco for some months, and was taking his work easier, and had had a carious tooth removed; but still the ulcer did not heal, and, though not actually painful, it was an annoyance to him from the constant salivation, and from the discomfort it caused when masticating his food. His general health, too, was suffering; he was depressed in spirits, and was losing flesh. He said that for many years he had occasionally suffered from sore tongue, but that when he moderated his favourite indulgence the soreness had always disappeared, until within a year or so, since which time his mouth had never felt comfortable. The right half of the tongue appeared swollen, and at the side was a longitudinal fissure extending deep into the organ. No glands appeared to be affected.

On August 29th, 1874, I removed the right half of the tongue with the loop of a galvanic ecraseur, first having passed two needles, made non-conducteous with sealing-wax varnish, one longitudinally, the other vertically, well behind the diseased part. A transverse section through the part removed showed under the microscope well-marked example of the "bird-nest" stratification of the cells, in the nodules of Epithelioma.

This patient made an excellent recovery, and has since continued quite well. He has gained flesh and strength, and lost the depres-

sion of spirits which the presence of disease in his tongue had caused, and a slight lisp is the only observable effect of the operation on his speech ; but there is an irritable state of the lining of the entire mouth which makes me fear an early return of the disease : and, although I have not seen him for some time, I believe, from his letters, that recurrence has already begun. Still, the operation was an undoubted gain ; for fifteen months he has been restored to health, and has given evidence of this in his improved appearance ; has been happier and brighter than he could have been with the thought constantly depressing him that a fatal disease was present in his tongue, and slowly, but surely, destroying life.

There is a point in both these cases, which has struck me in others also, namely, that men of more than ordinary intelligence, and whose work involves much anxiety and mental strain, appear to be specially liable to Epithelial disease of the mouth and tongue. The temporary effect of nervous excitement, in rendering the mouth parched, and clammy, and the tongue covered with tenacious foam, is familiar to us in excitable patients ; and I think it is not unreasonable to suppose that, when this condition is prolonged, and the secretion permanently interfered with, Epithelial disease may be induced.

A man, aged 70, was admitted into the Sunderland Infirmary July 2, 1874, with aggravated club-foot ; and, on the hard and thickened integument, beneath the astragulus, a large ragged ulcer existed, with undermined and everted edges, and yielding a thin, offensive discharge, frequently bleeding and very painful. The ulcer had been there for years. The glands in leg and thigh were not affected. The foot was amputated (tibio-tarsal), and, although there was neither sloughing, haemorrhage, nor pain, my patient quietly sank. Cheerful to the last, he appeared to die from the effect of an operation at his advanced age.

Mrs. C., aged 63, consulted me in May, 1870. More than a year ago, she had observed blood in her stools. She had pain, lancinating in character, at first intermittent, latterly severe, and worse at night. The speculum showed a ragged patch of Epithelioma, just within the anus. This patient's mother died at the age of 90, having cancer of lower lip.

Mrs. H., aged 40, consulted me in April, 1870, for dysuria, severe pain across the loins, offensive vaginal discharge, and occasional haemorrhage. The inguinal glands were enlarged and tender, and vaginal examination showed a deep, ragged ulcer of the cervix uteri. The uterus was fixed. The application of arsenic,

bromine, and the pernitrate of mercury, failed to effect any good, and she sank, exhausted by haemorrhage, hectic, and pain.

Two years afterwards, the mother of this patient, aged 70, consulted me with well-marked occult scirrhus of mamma, and, declining an operation, at my hands, she died while being "cured" by a bone-setter at Durham.

A woman, aged 42, was admitted into the Sunderland Infirmary March 16, 1875, with Epithelial cancer of the os, and cervix uteri. The organ was partially fixed, and, although the glands were not affected, she looked an unfavourable subject for operation. At her earnest request, however, I removed the os, and as much of the cervix as I could reach with the galvanic wire. This is the part removed, and here is a microscopic section of it; and you will see that the wire has cut through, and not above, the indurated tissue. She died of pyæmia, on the sixth day, partly due, I think, to the vagina having been plugged for twelve hours with lint steeped in carbolic oil. I would never again leave anything in the vagina after the bleeding has ceased.

Mrs. M., aged 38, consulted me in May, 1874, for pains in loins, loss of flesh, and great depression of spirits. She was married to her second husband, and had one child to him, two years ago. Her menstruation was natural, but she had frequently slight bloody discharge in the intervals. Vaginal examination showed a deep ulcer of the os, the edges of which were hard and swollen; the uterus was not fixed, nor were the inguinal glands enlarged. An elder sister had died of cancer in the womb. Bromine, and also the perchloride of iron, were several times applied. In July, 1874, she availed herself of the advantage of Dr. Gibson's opinion, who advised the application of pernitrate of mercury; and the bichloride with cinchona to be taken. The pernitrate seemed, for a time, to do good; bleeding and discharge almost ceased, but after the second application the pain was very severe, lasting for hours each time it was applied, and salivation invariably followed. As she was not improving, I determined to remove the cervix, and did so on October 5, 1874, quite satisfactorily, by means of the galvanic ecraseur. The only drawback to the success of the operation was that the fourchette got burned, and was very troublesome in healing. Her recovery was perfect; all her uterine symptoms ceased, menstruation has been painless and normal, and her general health excellent. I last examined her in September of this year, and found the vagina healthy and natural; the os uteri represented by a dimple, and no hardness to be felt. As she herself said to me, "Even if the disease return, a year's perfect health has been purchased by the operation."

A man, aged 70, was admitted into the Sunderland Infirmary in 1869. He had lead a most intemperate life ; and for two or three years had suffered from a sore tongue—a judgment, his wife said, upon him for the awful language he used to her when in his cups. The tongue was occupied on both sides by deep fissures—it was swollen, and occasionally bled ; there was constant salivation, and he had great difficulty in masticating his food. Pain was intermittent, but sometimes very severe. The glands were not affected. I removed the entire organ by means of an ordinary chain ecraseur. An incision was first made beneath the symphysis, into the mouth, the chain was then carried round and over the tongue, and brought out again through the same incision in front ; the separation was then very slowly affected. He recovered well from chloroform, and, at first, there was no bleeding ; but during the following three days haemorrhage returned three or four times, and was arrested with difficulty, by actual cautery. Within a fortnight, he was up, and able to swallow well, to go about, and the parts were nearly healed ; a fistulous opening, however, existed beneath the chin, and, as this caused much inconvenience to him from the draining away of saliva, and whatever he attempted to drink, I determined to close it. The little operation for doing so was performed under chloroform, and was apparently quite successful ; but to my great disappointment he never rallied, but quietly sank the following day.

This case, and also the one in which I amputated the foot, are illustrations of the truth of Sir James Paget's observations, in one of his charming essays, where, in speaking of the various risks of operations, he says that, "old age is most unfavourable to success under surgical interference. The aged bear badly large losses of blood, long exposure to cold, sudden lowering of temperature, and loss of food. The convalescence is often prolonged, and you may expect to meet sometimes with great disappointment in having your old patients die with some slight casual disease. They get all but well, but after seeming for some time stationary, they fade and die. They fulfil what I have often told you of the aged : that there are some to whom convalescence is more dangerous than disease. There is no graver complication than old age, unless, indeed, it be habitual intemperance." In this patient both these unfavourable conditions were present ; he was at advanced age ; and had lead an exceptionally intemperate life, yet he bore the very grave operation of removal of the entire tongue, the repeated haemorrhages which followed it, and the restricted diet which the condition of his mouth made necessary. He had gained flesh and spirits, and recovered in a great measure the power of speech, and was looking brightly forward to the remainder of his life being free from the distress he had so long suffered, when, under

the trifling shock of the little operation of closing the fistula beneath his chin, he sank and died.

W. U., aged 54, a shipmaster, consulted me in October last, for a small painful spot on the left side of tongue—he had only observed it for two or three weeks. He does not smoke, but is of somewhat intemperate habits. On the side of tongue is a slightly raised and thickened portion, the size of a threepenny piece, and on it is a deepish fissure; no glands affected. On October 5, I removed a piece of tongue including sore, and to-day, November 10, the wound is healed, but there is a puckering about the cicatrix, which makes me fear that this will turn out one of those cases in which disease returns almost before wound of operation is healed. This is a section of the piece removed.

In this paper I shall not mention those cases of epithelial disease occurring beneath the inner angle of the eye, known as "Jacob's Ulcer," and shall only allude to a class of cases where successful operation is familiar to us—I mean epithelial carcinoma of lower lip. In these cases early operation is generally successful in eradicating the disease; but where operation is deferred, we have such an advance of disease as is shown in this picture.

This man (the last case I shall mention) is 50 years of age. He observed first a warty sore on his lower lip, three years ago. But as his general health was good, he was advised not to submit his lip to operation, as "cutting always made these things worse." When admitted into the Sunderland Infirmary in August, 1875, his condition was what you see depicted here. The whole of the lower lip and chin were gone, and were represented by a mass of warty sponge, discharging bloody, offensive matter, and allowing the saliva to dribble from his mouth. The lower jaw for an inch on each side of the symphysis, was soft and spongy, and the incisors were ready to drop out. The glands were but slightly, if at all, affected. I determined to give him the chance of an operation. The angles of the mouth were extended, by incisions into the cheek, on both sides. The incision was then carried to the angle of the jaw, across to the opposite side behind the diseased mass, and the bone divided. A ligature was passed through the tip of tongue, and mylo-hyoid and geniol muscles divided. These are the parts removed, and this, a microscopic section, for which I am indebted to the kindness of our house surgeon, Dr. Ransom. The bleeding was not very formidable, and after three days he ceased to require the ligature to hold his tongue. The wound healed wonderfully, and but for the gap which remained, about $\frac{3}{4}$ of an inch wide, and which he will not let me fill up from skin of the throat, the operation has certainly exceeded my anticipations. He swallows, and speaks fairly well, and keeps the gap closed by a

pad, covered with a gutta percha tissue. Since this case, I observe that Mr. House, of Guy's, has had a similar case, but in his there was rapid recurrence along the course of the inferior maxillary nerve, meningitis, abscess in brain, and death.

I think, when we consider these cases and others like them, we may fairly deduce the conclusion, that operation, and repeated operation, in epithelioma should always be had recourse to. It is true that the disease will probably return, sooner or later, but the interval gained is a clear gain—it is a return, in most cases, to perfect health, and in some instances the disease does not recur at all; whereas, if nothing be done to arrest or remove it, epithelioma tends to go on steadily, but surely, accumulating fresh horrors upon the unhappy victim. Extended ulceration, increased discharge of offensive matter, pain more and more intense, and hæmorrhage more copious, and often repeated, until the patient sinks, wasted with drenching sweats, or exhausted by diarrhœa, crushed down, as it were, by the weight of misery, and unable longer to maintain a life out of which enjoyment had long since died.

MENIÈRE'S DISEASE.

BY BYROM BRAMWELL, M.B.

In the year 1861, a French surgeon, Menière, described a series of cases, characterised by the following symptoms:—Vomiting, deafness, noise in the ears, pallor, a reeling gait; and he showed by *post-mortem* demonstration that the symptoms did not depend upon disease of the central nervous system, as was formerly supposed, but upon structural lesions in the internal ear.

In some cases the onset of the symptoms was so sudden as to resemble apoplexy. He mentions the case of a girl, who caught cold whilst menstruating, was seized with deafness, giddiness, and vomiting, and died in five days. After death, the only lesion found was a kind of bloody exudation into the semicircular canals and vestibule.

Since the appearance of Menière's original paper many similar cases have been described by independent observers. The result has been to confirm his statements, and to show that the lesion is generally, as he supposed, situated in the semicircular canals.

The subject has also been worked at physiologically, and although its exact pathology is still unsettled and obscure, yet most observers are agreed as to the main fact, that injuries and disease of the internal ear, more especially of the semicircular canals, do cause the symptoms I have described above.

It is difficult to say how such lesions cause giddiness, reeling, and the whirling sensations which patients suffering from the disease complain of.

Goltz thinks the auditory nerve consists of two divisions; one distributed to the cochlea, it is the nerve of the special sense of hearing; the other distributed to the labyrinth and semicircular canals is not auditory, but is subservient to the maintenance of poise. The semicircular canals, he thinks, are the organs of the sense of equilibrium of the head, and therefore of the body. The semicircular canals contain a fluid called endolymph, and the presence of this fluid is the balancing power. The pressure of the fluid would be greatest at the most dependent point, and as this point must necessarily vary with every oscillation in the position of the head, a knowledge would be thus conveyed to the sensorium of the movements and of the new position. When the canals are opened, and the fluid escapes, this knowledge would not, of course, be afforded. Goltz believes that the semicircular canals are alone affected.

Knapp, an American, who has written an elaborate paper on the subject, believes that the cochlea is also implicated, and in sup-

port of this theory he quotes the fact that in some cases there is deafness for certain groups of musical sounds only ; it being admitted by most physiologists that the perception of musical sounds depends on the cochlea.

Loewenberg thinks the semicircular canals are affected, and he looks on the disturbance of motion as due, not to paralysis, but to irritation of the auditory nerve acting reflexly.

The lesion of the semicircular canals may be primary or secondary. If secondary, it very generally results from some fault in the more external parts of the auditory apparatus. Sometimes it is secondary to purulent processes in the middle ear. There may be in such cases a discharge from the external auditory meatus. In other cases the portio dura is involved in its passage through the petrous part of the temporal bone. In that case there may be paralysis of the facial muscles on the same side as the lesion. These events are, however, simply accidental complications, not necessary symptoms of Menière's disease.

The diagnosis is in some cases difficult ; especially is this the case where the onset is very sudden. On this point Tröllsch says : "If a person, who has formerly heard well, becomes suddenly deaf or hard of hearing, with the symptoms of an apoplectic attack, and there is at the same time an uncertain and staggering gait, but there are no symptoms of paralysis in the other nerve tracts ; and if the examination shows a normal membrana tympani and perfectly permeable eustachian tube, we may believe, with great probability, that there is an affection of the labyrinth."

I have thus briefly gone over the leading features of the disease, quoting somewhat largely from an article by Dr. Hughlings Jackson, in the *Medical Times and Gazette*. The subject is one of great interest, and has not, I believe, been previously brought before the notice of this Society. I will now detail the history of a typical case which I have lately had under observation.

John Moor, about 45, a cobler, was admitted under my care on September 15th, 1875, suffering from labyrinthine vertigo or Menière's disease.

Previous History.—With the exception of occasional headaches, he has enjoyed good health until his present illness commenced. When three years of age his left ear "gathered," and he has been slightly deaf on the left side ever since. He has not had syphilis. Has been very steady. Has worked very hard, in a small confined room, as he has a large family to support.

On Sunday, August 30, at 2 p.m., he was seized with a sudden pain in the left ear (he had been dull and heavy, and had felt a slight pain in the head for two days previously). The pain rapidly got worse, and became "so fearfully severe that he could have screamed out." After lasting for two hours he heard a loud click,

the ear had burst, a quantity of offensive smelling matter escaped.

After the abscess burst the pain was much relieved, but he now had a fearful noise in his head; it exactly resembled a steamer blowing off steam close to his ear. He became very giddy, and felt everything whirling round him. The sensation was most painful, and made him sick. He was obliged to keep his eyes shut, and remain in bed with his eyes closed for several days.

He vomited three times on Sunday, and several times since.

On Wednesday, September 2, he got out of bed, felt just as if he were drunk, reeled about, and tended to fall to the right side.

On Friday, September 4th, he was unable to close his left eye, and noticed that he spat crooked, and that fluids ran out of the left side of his mouth.

The *Family History* is unimportant.

Present Condition.—Patient is a well built, dark complexioned muscular man. The left side of the face is paralysed, but not completely so. He is unable to close the left eye, and does not wink. The tip of the tongue, when protruded, is apparently slightly turned to the right side. Sensibility of the left side of the face is somewhat impaired. Both common and special sensation on the left side of the tongue are less than on the right. The muscles of the left side of the face respond less strongly to faradization than those of the right. There is no paralysis of any other part, but the patient walks with a reeling gait. When walking, he keeps the eyes firmly fixed on the ground a few feet in front of him. The reeling is much worse when the eyes are closed. When walking, he feels as if the feet were being lifted up by themselves; he also feels as if he would tumble to the right side. He sees everything rapidly whirling round him from left to right. When he turns his head to the left side, the room seems to dart past him with the rapidity of lightning; when the head is turned to the right side, no such sensation is perceived. He is not giddy when lying quiet with his eyes shut in bed.

There is a discharge of offensive brown coloured matter from the left ear. On otoscopic examination, the membrana tympani is seen to be pierced by a slit-like triangular opening. The external parts of the auditory canal are inflamed, swollen, and bleed with the slightest pressure. The patient is quite deaf on the left side, both to external and to skull sounds. Hearing on the right side is normal. He complains of a constant, loud noise, like the blowing off of steam, inside his head. He thinks it is in the right ear. There is pain and tenderness on pressure over the left mastoid process. He has no pain in the head itself, but feels as if the left half of it were empty.

The left pupil is slightly larger than the right. Sight, if it were

not for the whirling sensation, is natural, and, on ophthalmoscopic examination, the discs are seen to be normal.

Smell is natural. The reflex functions are normal. He sleeps badly, because of the pain in the ear. He is very intelligent.

The tongue is clean and moist; appetite poor; bowels costive; he has not vomited for several days.

The radial pulse is 84; the temperature normal.

The other organs are normal.

Treatment.—Purgation. The left ear to be syringed out twice daily. To take ten grains of iodide of potassium three times a day.

September 18th.—He thinks he is worse. The pain was very severe last night. There is great pain in the teeth of the lower jaw on the left side. To have a subcutaneous injection of morphia at bed time, and to be blistered behind the left ear.

September 19th.—Is much easier.

September 24th.—Decidedly better. Is not so giddy. Muscular power is returning in the left side of the face. The tip of the tongue is no longer turned to the right side. Sensibility, both common and special, is now equal in the two sides of the organ.

October 11th.—Greatly improved. The facial paralysis is almost gone. He walks without any reel, but still feels very giddy. He is as deaf as ever, and still hears the noise in the head.

October 15th.—He was obliged to go home to attend on his wife, who is ill.

November 10th.—Very much better.

REMARKS.

This case presented all the typical symptoms of Menière's disease, complicated with a purulent discharge from the left ear and left-sided facial paralysis. The patient was very intelligent, and volunteered most of the above statements. The parts of special interest are—

1st.—The fact that he was deaf on the left side to all sounds. The tuning fork, when placed on the head, was unheard by the left ear, even when the left external auditory meatus was closed by the finger.

2nd.—The direction in which objects whirled round him from left to right—that is, from the affected to the sound side. The same thing was seen when he turned his head to the left. Objects then seemed to fly past him with the rapidity of lightning.

3rd.—When walking he tended to fall to the right—that is, to the sound side.

The facial paralysis was no doubt due to the implication of the portio dura in its passage through the petrous portion of the temporal bone.

The result of the case, so far as it has gone, has been highly satisfactory.

Dr. HUME said the case which Dr. Bramwell had read was just one of those cases in which it was impossible to prove that the symptoms were caused by the lesion of the semi-circular canals. The disease in it was evidently extensive, involving not only the middle and internal ear, but also other neighbouring parts. Most of the cases recorded had been of this complicated character. It was in consequence of this that so much controversy had arisen between physiologists and surgeons as to the existence of any such distinct disease as that described by Menière. No simple case had occurred.

Dr. EMBLETON said : It is quite possible that in the cases mentioned there was some lesion of the corpora quadrigemina. Magendie had shown, years ago, that injury and irritation of these bodies cause rotation.

Dr. BYROM BRAMWELL thought the existence of Menière's disease was clinically proven. The original case described by Menière, which he had quoted, justified this statement. In that case the symptoms were present during life, the only lesion discovered after death was a kind of bloody effusion into the semi-circular canals. Other clinical observers had established the same fact. Physiologists had not been quite so successful. Brown Sequard tried to show that section of the auditory nerve caused the symptoms. Flourens was of opinion that the symptoms were due to irritation or lesion of those parts of the central nervous system which lie in close proximity to the internal ear, especially of the cerebellum. Some more recent experiments on frogs left it doubtful if simple injuries of the semi-circular canals in those animals caused the symptoms. It was doubtful if irritation or destruction of the corpora quadrigemina caused rotation. Ferrier, whose brilliant researches had lately been published, showed that irritation of the posterior pair caused opisthotonus, not rotation ; irritation of the anterior pair dilatation of the pupil.

Dr. EMBLETON said : I should not be surprised to find the modern physiological results overthrown. I know the great difficulties and uncertainties of experiments of this sort. It is most difficult not only to obtain satisfactory results, but also to interpret these results aright. I distrust them all. We want corroboration and confirmation. I would require frequent and repeated confirmation before believing them. Young gentlemen always seem to think the last and most recent experiments the best.

Dr. BYROM BRAMWELL said he did not wish to claim infallibility for the experiments of Ferrier, or any other modern physiologist. He thought, however, the moderns were to be trusted as much as

the ancients in these matters. Modern physiologists had instruments of precision and methods of inquiry which were previously unknown. He would be the last to disparage the labours of Magendie. He, however, thought the results obtained by leading modern physiologists were quite as reliable as those of that celebrated observer, and perhaps more so.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE third monthly meeting of the Society was held in the Library of the Infirmary, on December 9th, 1875; the President (Mr. Broadbent) in the chair.

The following gentlemen were elected members of the Society—

Duncan Stewart, L.R.C.P., Hexham.

Luke Blumer, M.D., Sunderland.

John Russell Sutherland, L.R.C.P., Edin., West Rainton.

The following gentlemen were proposed for election :—

John Clarkson Maynard, M.R.C.S., L.R.C.P., Bishop Auckland.

J. Heffernan, L.R.C.P., Jarrow.

R. A. Tindall, M.R.C.S., North Shields.

F. W. Skrimshire, M.R.C.S., Morpeth.

James Duncan, L.F.P. and S., Glasg., Newbiggin-by-the-Sea.

ALTERATION OF STANDING ORDER.

Mr. MORGAN proposed, “ That the chair be taken at half-past six, punctually, instead of seven o’clock.”

Dr. EASTWOOD seconded the motion, which, after some discussion, was put to the meeting, and carried.

The PRESIDENT intimated that the alteration would come into effect at the next meeting.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of November, 1875.

	ADMITTED.	DIED.
Scarlet Fever ...	5	—
Continued Fever ...	1	—
Total ...	6	—

PATHOLOGICAL TRAY.

Mr. JEAFFRESON exhibited—1. A urinary calculus, which had been removed from the bladder of a boy, aged $4\frac{1}{2}$ years, by lateral lithotomy. The chief peculiarity of the case was the fact that a calculus had been, two years previously, removed from the same subject.

2. Six specimens, some photographs and drawings, illustrative of intra-ocular tumours:—

No. 1. Specimen. Glioma of the retina in its earliest stage. The adventitious product has produced a thickening of the retina generally, but interspersed are numerous small sago-like grains, and a quantity of fine granular whitish matter.

No. 2. Glioma in a more advanced stage, and occupying a great portion of the vitreous chamber.

No. 3. Glioma, which has disorganised the eye completely, ruptured the globe, and invaded the cavity of the orbit.

No. 4. Photograph: a gliomatous tumour, which was allowed to run its course until death, which occurred four years from the time of its first appearance. The tumour was of enormous size, hung over the cheek, and even prevented free access to the mouth.

No. 5. Sarcoma of the choroid, removed from a man, æt. 40. It occupies a considerable portion of the cavity of the globe, but has not spread beyond.

No. 6. Sarcoma, commencing apparently in the ciliary body. The globe is ruptured, and in a short time the orbit would have been invaded.

Mr. JEAFFRESON said: That although modern pathologists had shown that the more genuine cases of cancer (that is to say, growths characterised by an epithelioid type of cell) are rarely, if ever, developed within the eyeball, yet the almost equally malignant sarcomata are common. The chief types of tumours are gliomata; and sarcomata, of the round or spindle-shaped variety. Occasionally, the sarcomata are pigmented, becoming what is usually termed melanoid. Gliomata and sarcomata have many well-marked characteristics which distinguish them clinically. The former always occur in early, if not infant, life. They commence in the neuroglia of the retina; are, as a rule, easily recognised ophthalmoscopically; and give rise to but little pain and irritation. The sarcomata, on the other hand, usually occur in a more advanced period of life. Their seat is in the choroid or some part of the ciliary body; they are more difficult to recognise ophthalmoscopically, owing to the disturbances of circulation and irritation to which they give rise within the eyeball—hyperæmia and consequent hyperæsthesia, cloudiness and detachment of vitreous and retina. It is not an unusual thing for

a commencing sarcoma to be mistaken for a case of glaucoma, chronic iritis, or choroiditis with detachment, and its diagnosis is usually attended with some difficulty. With regard to the recurrence of these growths after removal, I believe that when removed early, and before they have spread beyond the globe or along the optic nerve, they do not often return ; but the difficulty of tracing these cases after operation makes it impossible to give any very definite statement concerning this point. During the last five years, I have extracted altogether eighteen eyes for intra-ocular tumours. Of these ten were gliomata, eight sarcomata, two being of the melanoid variety.

Dr. BEATSON showed—1. Bones of the ear discharged after scarlet fever. The patient was a boy who, seven months ago, had an attack of scarlet fever. During convalescence, he was affected with otorrhœa. When he presented himself at the Newcastle Infirmary, eight weeks ago, both membranæ tympani were perforated. The bones exhibited were subsequently discharged. Astringent lotions were used. Hearing was still very imperfect. Dr. Beatson thought it might be improved by means of an artificial tympanum.

Mr. JEPSON asked if the patient came from the country.

Dr. BEATSON thought so, but was not sure.

2. A fractured patella. The fracture was a simple one, but very severe, the fragments being completely separated. It was found necessary to remove the fragments by operation.

Mr. JEPSON exhibited an aneurism of the thoracic aorta, and said : This aneurism and portion of sternum were removed from a man aged 53. He had no fixed occupation, and had led an intemperate life. He had not experienced any very severe exertion or strain. The first signs of an aneurism showed themselves fifteen months before death. There was a pulsating tumour in the upper part of the chest, and a distinct bruit. The radial pulses were equal. There was no marked turgescence of the veins, and no œdema of either upper extremity. Some six months after the appearance of the tumour, the patient began to complain of pain in the chest. The pain gradually increased, and at last became so severe as to necessitate the subcutaneous injection of as much as a grain of morphia at one time. The tumour did not increase much in size, but towards the end its walls got thicker, and the force of the pulsation was diminished. The left side of the chest appeared to be heaved forward. Death was caused by exhaustion and dyspnœa, from the pressure of the aneurism on the bifurcation of the trachea.

Mr. FIELDEN exhibited a beautiful specimen of malignant disease of the femur, and said : This is an example of osteo-sarcoma of a

very malignant type. The subject of the disease was a young man aged 19. About the middle of January of the present year he received a blow a little above the inner condyle. He continued at his work in the mine till early in February, when the pain became so excessive that he was compelled to desist. In spite of treatment the disease progressed, the tumour growing with great rapidity ; severe lancinating pains being experienced ; and the patient gradually emaciating. The tumour itself involved the lower two-thirds of the femur, and was ovoid in form, measuring $9\frac{1}{2}$ inches in length, while its circumference at the most prominent part was 23 inches. To the touch it was tense, elastic, and in places fluctuating ; the superficial veins were greatly enlarged and tortuous — the inguinal glands did not appear to be implicated.

The only hope of benefit lay in the removal of the limb ; and I proposed amputation at the hip joint. To this he readily assented, and on the 4th of May I performed the operation according to the plan practised by the late Mr. Syme. By this method “the anterior flap is made in the usual way by transfixing, at a point midway between the anterior superior spine of the ileum and the great trochanter, the point of the knife being made to emerge close to the tuberosity of the ischium, cutting out a long and equally curved flap ; a straight incision is then made from the outer edge of this flap to about two inches below the great trochanter, and from the lower end of this incision, by transfixing again, a posterior flap is cut, a few strokes of the knife completing the disarticulation.” By this means, Syme claimed that “the resulting flaps come together with greater accuracy, and are not burdened with the great unequal masses of muscles noticed in the posterior flaps made by cutting from within outwards *after* disarticulation.”

In my case, at any rate, the plan answered admirably, and the lad rapidly recovered, being able to sit out of bed within the fortnight, and to drive about in less than a month. He gained flesh and strength, and in every way seemed better for nearly five months, when obscure chest symptoms showed themselves. There was general dulness on percussion, with tubular breathing ; he suffered greatly from dyspnœa, cough, haemoptysis, &c., lingering for two months, and at last died asphyxiated. On examination, *p.m.*, the lungs were found to contain numerous irregular masses of morbid growth, about the size of a plum, and larger. In consistence they varied, some being very hard and calcareous, others, moderately firm. On section the softer portions were white and glistening.

I am indebted to Dr. Bramwell for microscopical examinations and reports of the specimens ; and by his kindness I am enabled to show sections under the microscopes this evening. They illustrate very well the structure of the diseased growth, both in its

primary and secondary forms. The soft part of the growth consists of—1st. Large and small spindle-shaped cells, with large nuclei and nucleoli. 2nd. Irregular cells, round, oval, &c., about three times the size of a red blood corpuscle. 3rd. A few giant cells. The harder portions seem to have undergone a sort of spurious ossification. No true bone was found.

Dr. ARNISON showed a tongue, affected with malignant disease, which he had removed in its entirety by the galvanic cautery. The operation consisted in making an incision through the lip and chin to the bone: then dividing the lower jaw, by means of a $>$ -shaped cut at the symphysis; and then passing the loop of wire round the base of the tongue, which was cut through in twenty minutes after the heating of the wire. The jaw, after the removal of the tongue, was brought together by two sutures of carbolised catgut, introduced through four gimlet holes, and it was hoped that these sutures would remain and not require removal. The operation was done ten days ago, and the progress of the patient, so far, was satisfactory.

Dr. MORDEY DOUGLAS asked if Dr. Arnison had removed the whole tongue by passing a single loop of the wire over the organ, or whether the two halves had been removed separately. Also, whether any special means had been taken to draw forward the organ. In the case which he exhibited, two years ago, the tongue was drawn forcibly forward, the angle of the jaw being at the same time forcibly retracted; by that means the whole organ was removed by means of a single loop of the wire. In his case, the patient was exhibited to the Society a month after the operation, and was at that time apparently in good health. Unfortunately, the disease returned six weeks afterwards, and the patient is now dead.

Dr. ARNISON said: In this case the whole of the tongue was removed by passing a single loop of the wire over the root of the organ. He had divided the jaw, because the under surface of the tongue was extensively diseased. By this means the floor of the mouth was fully exposed, and all the diseased structures could be thoroughly and satisfactorily removed.

Dr. HEATH showed—1. A naso-pharyngeal polypus of large size, removed from a lad eighteen years of age. The face was much distorted; the left eye was thrust forward; the nostril distended. One portion of the growth could be seen in the cavity of the left nostril, another portion could be felt when the finger was passed through the mouth to the back of the soft palate. The patient suffered a great deal of pain, and lost a good deal of blood by repeated haemorrhages. The breathing was difficult; the tear sac was obstructed. The growth sprang from the basilar process

of the sphenoid bone. The tumour was removed by an operation which was necessarily a severe one. The nasal bone was reflected attached to a skin flap: a clear road was thus obtained. The pedicle of the tumour was then removed by the finger, it being loosely attached to the periosteum. In most cases it was necessary to divide the pedicle by the galvano-caustic wire. The large cavity was plugged. The patient made an excellent recovery, and was able to go home within a fortnight.

2. A fibrous tumour removed from the orbit. The patient was a married woman, aged 30. Fourteen years ago, a similar tumour was removed. It returned, and, seven years ago, the tumour was again removed by exactly the same incisions, the old cicatrix being simply opened. It again returned, and was removed a few weeks ago. This time the tumour had involved surrounding parts. The whole of the contents of the orbital cavity were removed. It was found necessary to take away a portion of the orbital plate of the frontal bone. The brain substance was exposed. The patient never had a bad symptom, and went home within a week. She wears an artificial eye, and looks well.

3. A bougie removed from the bladder. The patient came to the Infirmary suffering from symptoms of stone. A solid body, of small size, was readily detected by the sound. The Median operation was performed, and the bougie exhibited was readily removed. The patient made a slow recovery. The bladder was very irritable. The patient was in the habit of passing bougies, which were brought in to him by his friends. It was ascertained that he had for some time been in the habit of amusing himself in this manner.

Mr. JEAFFRESON said he had met with a similar case to the one just related by Dr. Heath. A gentleman, who was in the habit of passing bougies on himself, consulted him with well marked symptoms of stone. Mr. Jeaffreson sounded him with the lithotrite; caught the supposed stone, but was unable to crush it or to withdraw the instrument, the blades of which had become fixed; the patient became very much excited, but quieted down when the exact condition of matters was explained to him. Assistance was obtained, chloroform was administered, the instrument was withdrawn, and in it eight inches of a gum elastic bougie coated with phosphates. Considerable force had to be used in removing the lithotrite, the urethra was much lacerated. The patient made a good recovery, and has not had any return of his symptoms.

EXHIBITION OF PATIENTS.

Mr. JEAFFRESON exhibited—1. A boy, aged 13 years, who was suffering from paralysis of a large number of the cranial nerves, the result of an injury to the base of the skull. The history of the case was as follows:—Three months ago, whilst working in a pit, his head became jammed between the roof and a tub. When picked up, a wound about an inch long was found in the left superciliary region, and some considerable bruising over the mastoid process on the right side of the skull. The lad was insensible, and blood issued from the nose, mouth, and left ear. He remained insensible for a week, the urine and motions passing involuntarily; but gradually after this consciousness began to return. Mr. Jeaffreson saw him two months after the accident, when he was in the following condition:—

The *first nerve* was apparently unimpaired, and he recognises the smells of scents, &c.

The *optic nerve* on the left side was atrophied, and there was little more than perception of light. On the right side there was better perception of light, but an ulcer occupied the cornea, and prevented ophthalmoscopic examination.

The *third nerve* was unimpaired.

The *fourth nerves* were both paralysed.

The *fifth nerve* on the left side was unimpaired, but on the right the ophthalmic division was paralysed. There was complete loss of sensation in the parts supplied by its branches, anaesthesia of the cornea, and a deep ulcer characteristic of this condition.

The *sixth nerves* were both paralysed, the result being a strong convergent squint which he cannot overcome.

The *seventh nerves*.—It was doubtful if the portio dura was injured. Some observers could see a slight dragging of the mouth to the right side, but others could not. Hearing was much impaired, especially on the right side.

The *eighth and ninth nerves* were apparently unaffected.

Mr. JEAFFRESON stated: That there could be little doubt that the lad had suffered from a fracture of the base of the skull; that in all probability some of the nerves had suffered direct injury from which it was impossible they would recover; that others, again, might only be temporarily interfered with by the pressure of effused blood. He was led to that conclusion by the fact that, under treatment, the condition of the fifth nerve had much improved, the corneal ulcer healing, and its transparency increasing.

2. A little girl, on whom he had performed, in either eye, a small iridectomy inwards, to overcome the impediment to vision caused by granular cataract. The child, who previously was unable to recognise characters, can now read with ease.

Dr. NEWCOMBE asked if it would not have been easier to have broken up the cataract?

Mr. JEAFFRESON said the operation he had performed was attended with much less risk of losing the eye, and the patient did not require spectacles.

Dr. ARNISON showed two boys, aged 16 and 4, the subjects of cleft palate, which he had closed by operation; also the patient, aged 54, from whom he had removed the large parotid tumour, shown at last meeting. The wound was quite healed.

Dr. BYROM BRAMWELL showed—1. A case of progressive pernicious anaemia, and said: Cases of anaemia occurring without any apparent cause were first described by the celebrated English physician, Dr. Addison, under the name of "Idiopathic Anaemia." Two German physicians, Dr. Biergen and Immermann, lately re-discovered the disease, and gave it the name of "Progressive Pernicious Anaemia." In the last number of the *American Journal of Medical Sciences*, there is an able article on the subject by Professor Pepper, of Pennsylvania. He points out the identity of the progressive pernicious anaemia of Biergen, and of the idiopathic anaemia of Addison. The same fact was noticed in a letter from Dr. Wilks, which appeared in the *British Medical Journal* of November 28th, 1874.

The symptoms of the disease are progressive debility and pallor, without emaciation, haemic murmurs, palpitation, dyspnoea, occasional vomiting, and diarrhoea, passive dropsies, retinal haemorrhages, increased debility, coma, and death.

On microscopical examination of the blood, the red corpuscles are found to be greatly increased in numbers; the white corpuscles are not in excess. I find not only a diminution in the number of globules, but a marked alteration in their shape, some of them are very large, and no longer bi-concave, others are irregular, with one or more tail-like projections; others at first sight appear nucleated: there are also numerous small red corpuscles, and free masses of protoplasm.

The disease is said to be uniformly fatal. Fatty degeneration of the heart, liver, and kidneys is found on *post-mortem* examination.

Professor Pepper describes a hyperplasia of the marrow of the bones.

The patient exhibited presents all the typical appearances of the disease. I have met with five other cases, two of them recovered, the others died.

Dr. MORDEY DOUGLAS said he remembered seeing the letter from Dr. Wilks, in which he pointed out that a mental shock was in some cases apparently the cause of the disease. Soon after seeing this statement, he met with a case which confirmed it. A

laundry-maid was frightened by discovering the remains of a putrid child. She gradually became anaemic, suffered from the symptoms described by Dr. Bramwell, and finally died.

Mr. CLARK said he was much interested in the case just described, the patient had been under his care previous to his admission to the Infirmary. He had also met with another case which, for three months, had resisted all treatment. The patient finally got well. Both patients had worked in chemicals. He thought the nature of their employment might be the cause of the disease.

Mr. MORGAN said he had at present under his care a patient suffering from this form of anaemia. He was 50 years of age, an ironworker ; a piece of iron fell and struck him. He recovered from the immediate effects of the accident, but became anaemic. A very distressing symptom in his case was tinnitus aurium. He was never easy except under sedatives.

Dr. MICKLE said he had seen a case of this profound anaemia ; the patient was a woman 45 years of age. Her sister had died of the same complaint, a few weeks after her confinement. Her daughter was affected with exophthalmic goitre.

Dr. BRAMWELL, in reply, said he had been very much interested in the remarks of the various speakers. Ample evidence had been given to show, as Dr. Wilks supposed, that the disease was well known to English observers. The fact that Mr. Clark's case had recovered was important, for it confirmed his opinion that the disease was not invariably fatal.

2. Case of molluscum fibrosum. The patient was a woman, æt. 56. Three years ago, her breast had been removed for a tumour. Six months since, various small lumps appeared in the skin of the trunk. There were now more than three hundred ; they were hard, varying in size from a pea to a marble.

NOTES OF A CASE OF EXCISION OF THE HIP JOINT.

By W. C. ARNISON, M.D.

SURGEON TO THE NEWCASTLE-UPON-TYNE INFIRMARY.

Wm. MARK, aged 6, Gateshead, was admitted into the Infirmary under my care on March 25th, 1875. He had been previously under my care with disease of the hip joint, but under treatment recovered sufficiently to permit of his removal home. Since his discharge, however, the disease had advanced, an abscess had formed and burst, and the condition at the time of his admission was as follows :—Marked shortening and wasting of the limb : an open sinus communicating with the joint : great pain on the slightest movement. Grating was distinctly felt on moving the joint. The patient was pale and emaciated, and, unless something was done, had evidently but a very few weeks of life to look forward to ; it was therefore decided to excise the joint, and on April 6th the operation was performed.

Operation.—An incision was made from the sinus, which opened at the outer side of the joint, and continued through the tissues behind the trochanter, until the joint was reached, and freely opened ; the lower end of the thigh was then grasped and used as a lever to turn out the head of the bone, but with a very moderate exercise of force, the epiphysis at the lower end of the femur was felt to tear away from the shaft, the head of the bone was, however, turned out of the acetabulum, and found to be reduced to a mere stump, soft and carious, and easily cut off by cutting pliers. When the head of the femur was cut off—for its preservation I am indebted to the kindness of Dr. Hume—the acetabulum was also found to be extensively carious, and required such free use of the gouge, that some care was necessary to prevent the pelvic cavity being opened.

A long bracket splint was applied on the outer side of the limb, and the wound was dressed with carbolic oil.

As regards appetite, sleep, and the general condition of the patient, there was a marked improvement from the day of the operation. The wound granulated favourably, and all went well till about the 28th of April, twenty-three days after the operation, when a marked rise of temperature and pulse showed that there was something amiss. It was found that an abscess had formed in front of the thigh. The abscess was opened, a drainage tube inserted, and extension by pulley and weight was substituted for the bracket splint. On May 9th, the wound had granulated level; and on the 12th, some skin grafts were applied, with success. On June 1st, the drainage tube, which had been gradually shortened, was entirely removed from the abscess, which gradually closed.

On June 5th, the boy was allowed to get up ; on the 18th, the wound was found to be quite closed ; on the 30th, he is reported in the notes as being in the garden every day ; and on July 12th he went home.

The injury to the lower end of the bone, at the time of the operation, gave no trouble, and did not in any way interfere with the progress of the case.

Unfortunately, since leaving the hospital, the boy has been exposed to unfavourable sanitary influences ; there is a drunken father and attendant poverty. He lives in a wretched cellar kitchen, with insufficient food to eat and a foul atmosphere to breathe, and the result is that his appearance is now worse than when he left the Infirmary. The wound has broken out again, and scrofulous sores have formed near it, but, even with all these drawbacks, the hip itself remains in a satisfactory condition. There is slight actual shortening, with slight apparent lengthening, due to the oblique position of the pelvis. The thigh is fairly movable from the false joint which has formed, and passive or active motion gives no pain ; he can bear some weight on the limb, and walks well on crutches, slightly resting the foot on the ground at each step. (The boy was present, and was shown to the meeting.)

This case seems to call for few remarks. When I gave notice of the paper, I had not seen the patient for many weeks, and, on looking him up at his own home, was disappointed at finding the state of the limb such as I have described ; but yet, I think there is every reason to hope that, under better domestic conditions, which I think may be attained, the ultimate result will be perfectly satisfactory.

Mr. JEAFFRESON said he had performed the operation several times in the Children's Hospital, and had come to the conclusion that the operation should be performed early. The surgeon should not wait until the patient was in the final stage of exhaustion.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE fourth monthly meeting of the Society was held in the Library of the Infirmary, on January 13th, 1876; the President (Mr. Broadbent) in the chair.

The following gentlemen were elected members of the Society—

John Clarkson Maynard, M.R.C.S., M.R.C.P., Bishop Auckland.
J. Heffernan, L.R.C.P., Jarrow.
J. G. Tindle, M.R.C.S., North Shields.
F. W. Skrimshire, M.R.C.S., Morpeth.
James Duncan, L.F.P. and S., Glasg., Newbiggin-by-the-Sea.

The following gentlemen were proposed for election :—

S. W. Rayne, F.R.C.S. (Eng.), Newcastle-on-Tyne.
James Wilson, L.R.C.P., Sunderland.
M. Brumell, M.R.C.S., Morpeth.
Wm. Mearns, M.A., M.B., C.M. (Aberd.), Gateshead.
John H. N. Ridley, M.R.C.S., Gateshead.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of December, 1875.

	ADMITTED.	DIED.
Typhus	5	1
Enteric Fever	1	—
Scarlet Fever	1	—
Total	7	1

Dr. PHILIPSON presented the second report and appendices of the Royal Sanitary Commission. He expressed his appreciation of the honour which the Commission had done him, by inserting in the appendix a statement, which he had prepared, respecting the registration of disease, and by recommending to H.M. Privy Council, in the form of a resolution, the institution of a national registration of disease. Dr. Philipson stated that if it had not

been for the formation of the Northern Counties Association of Medical Officers of Health, he would have moved that a committee of the Society be appointed to watch the question when it came before Parliament, but that he would suggest such a course of procedure to that Association. He fully expected that the Parliamentary Committee of the British Medical Association would be very observant in the matter. Dr. Philipson then formally handed to the President the report and appendices, to be placed in the library of the Newcastle-upon-Tyne Infirmary for reference.

Dr. Foss suggested the advisability of having the occupation of the deceased stated on the death certificate.

Mr. H. E. ARMSTRONG proposed a vote of thanks to Dr. Philipson for his present, and for the manner in which he had introduced the subject. Mr. Armstrong stated that he would bring the matter before the notice of the Association of the Medical Officers of Health.

Dr. HUTCHINSON seconded Mr. Armstrong's motion, which was carried by acclamation.

Dr. PHILIPSON expressed his thanks for the compliment, and said that it was to him a sincere pleasure, that through the instrumentality of a local medical society, a Royal Commission had been so influenced, that a national system of the registration of disease was likely to be established.

PATHOLOGICAL TRAY.

Dr. HEATH showed—

1. A cyst removed from the abdominal wall. Before removal, it resembled a fatty tumour. After removal, it looked like the columnæ carneæ of the heart. It grew in the neighbourhood of the umbilicus.

2. A small calculus removed from the urethra.

3. A pistol bullet, and said: The pistol bullet which I now show came from the head of the woman Charlton, killed by her husband at Dinnington.

The shot was fired about three in the afternoon, and it was about nine when I saw Mrs. C., who was then alive, but totally unconscious. She was lying on a couch, on her back, breathing regularly and without noise. The eyelids were half closed; the pupils much contracted; the pulse feeble. There was a small round wound above and behind the ear, penetrating the posterior and inferior part of the parietal bone, a little above the angle: blood and brain oozed from this opening. A probe introduced passed without force about $1\frac{1}{2}$ inches in a direction downwards,

forwards, and inwards. Mrs. C. died about two o'clock in the morning of the day following the injury. She remained unconscious until death, and the breathing was subsequently accompanied by stertor.

I am favoured by Dr. Galway with the following notes of the *post-mortem*, made by him and Mr. Jamieson, of Ponteland :—

"The bullet perforated the skull at a point one inch above and a quarter of an inch behind the right external auditory meatus. Splinters of bone were driven inwards in the track of the ball, which was marked by broken down brain tissue and minute effusions of blood. There was no real canal through the brain. The direction of the track was directly across. The point of exit was a little above the left internal auditory meatus. The dura mater at this point was ruptured, and there was a large clot of blood adherent to the surface of the brain. On removal of the brain the bullet must have fallen out, for it was found in the hair.

"Entering then about the posterior termination of the Fissure of Sylvius, the bullet traversed the brain in front of or a little above the crura cerebri,

"A large clot of blood was found in the interpeduncular space, as well as in the lateral and third ventricles."

If we look at the Whitechapel murder by the light obtained from this case, it becomes easy to understand why three shots should have been fired at the woman Lane. The first bullet no doubt perforated the skull—had this not been so an alarm would have been raised—but breathing still continuing, the wound would be regarded as not absolutely fatal, and the second bullet was fired at the back of the head and caught the hair pad thickly stuffed with pins. The third shot was then discharged more in front of the skull, again penetrated, no part of the brain immediately necessary to the action of the heart and respiration being wounded, those actions continued ; and now, in desperation, the throat was cut—the murderer, although ready to take life, yet shrinking from burying his victim whilst yet breathing.

4. A pistol bullet removed from the head of a person who was killed by a fall some weeks after the receipt of the pistol shot, and said : The last objects, Mr. President, which I have to show are of considerable pathological interest. They are a part of the brain, and the injured portion of the skull, with bullet attached by a coating of lymph, removed from the body of a man who was killed by a fall about six months after the receipt of an injury by a pistol shot in the head.

I was called to see this man when he received his first injury, and it will render the specimens more interesting to describe his condition at the time of my visit, a few hours after the infliction of the wound. He was lying on his back upon the floor, with his eyes closed. There was a small round wound on the right side of

the head in front of the ear and above the zygoma. The edges of the wound were slightly inverted and not jagged ; there was no bleeding from the wound, nor any appearance of brain about it. He was conscious, and I think truly sensible of his condition : he evidently heard when spoken to, but made no distinctly audible reply. The respiration was quiet, rather slow ; the pupils were not more dilated than the dimly lighted condition of the room would render them, and they both contracted on bringing a candle near the eyes. At this time there was not, indeed, any visible symptom of serious injury to the brain, his pulsation and his prostrate condition masking the paralysis which afterwards appeared. Soon after I left the house he swallowed some brandy and water, and recognized Mr. Jamieson, the surgeon.

On the third day after the injury, I have ascertained that there was delirium, stuttering and imperfect speech, paralysis of the left side, dilatation of the right pupil, and ptosis certainly of the right eyelid, possibly of the left also, but the statements on this point are contradictory.

His condition gradually improved. The general symptoms of brain disturbance passed off, and he became capable of moving. Paralysis of the left side, dilatation of the right pupil, slight external deviation of the right eyeball, and ptosis of right upper eyelid continued ; but at the time of death were disappearing.

Post-mortem Examination.—As already stated, death was the result of a fall. A portion of a platform, upon which the man was standing, suddenly gave way, and he fell some distance, a thick rope at the same time, entangled about his neck, tightening with great force.

Examination made a few hours after death.—The face was calm and undistorted, but darkly livid on cheeks, lips, and forehead. The ears were purple, especially the right. Both pupils were dilated, the right more so than the left. The pupils were also irregular, the outer edge of each being drawn into a straight line, whilst the inner edge of each was rounded, but showed a wavering outline.

On the right side of the head, a finger's breadth above the zygoma, and two inches in front of the ear, was a scar, flattened, dark blue, and less than a quarter of an inch in diameter. Dark blood, which did not coagulate, flowed freely from the incisions through the scalp ; there was no bleeding in dissecting back the scalp afterwards. In throwing down the scalp on the right side, the track of the bullet was easily traced from the skin through the superficial fascia and temporal aponeurosis to the periosteum and bone. The cellular tissue formed a sort of sheath round the track, dense in structure, and slate-coloured. The muscular fibres of the temporal muscle were altered, and dark blue. The fascia

and periosteum each showed a dark blue scar. The opening through the bone was closed, with the exception of a small space through which a suture needle could be passed. There was a depression in the bone at the point of entrance, and its surface was rough.

Sawing through the skull was a work of labour, the bone in some parts being one-third of an inch thick.

The convolutions of the brain were large and well marked ; the venous sinuses full of blood. The arachnoid covering the posterior two-thirds of brain opalescent ; but transparent over the anterior lobes.

Removal of Brain.—Almost immediately on beginning to remove the brain, it was observed that the middle lobe was attached to the dura mater both at its anterior outer surface and also at its anterior inner and inferior department.

On carefully separating the lobe, it was found that the brain arachnoid and dura mater were closely united together and to the internal surface of the skull at the inner opening of the bullet wound. The inner table of the skull was depressed here, and the thickened and adherent membranes had formed a sort of sheath round the track of the bullet. As the brain was gently drawn away from the dura mater, it was seen that the brain substance was softened at the point where the bullet track entered it : it tore here, slightly enlarging the wound, and showing a yellow laceration.

The lobe was now carefully raised from the middle fossa of the skull. As this was done, the adhesions between the inner and inferior surface of the lobe and the inferior surface of the skull were put upon the stretch, and were seen to pass to the dura mater covering the right side of body of sphenoid and the wall of the cavernous sinus. As the brain was raised up, the third nerve was seen enveloped in adhesive lymph for about the eighth of an inch previous to its entering the wall of the cavernous sinus. As the adhesions gave way in separating the lobe, a dark object was seen lying upon the extremity of the petrous portion of the temporal bone, but veiled as with a sheath by a complete web of lymph, and on the inner and under aspect of the lobe was the inner and terminal extremity of the bullet track. Here, as at the outer entrance into the brain, the brain substance was softened, and gave way in the removal, showing a yellowish laceration. Previous to the complete removal of the brain, a blowpipe was passed from the external wound along the entire course of the bullet track, traversing successively the bone, dura mater, arachnoid, pia mater, and anterior part of middle lobe of the brain coming on emerging from the brain upon the bullet in its wrapping of adhesive lymph loosely lying upon the extremity of the anterior surface of the petrous portion of the temporal bone.

Examination of the seat of injury to the brain, after its removal, showed that the bullet had completely traversed the front of the middle lobe, entering its side where it corresponds to the temporal bone, and passing through in a direction downwards and slightly backwards, converging from the inner edge of the inferior surface a little posterior to the point of entrance, and where the lobe rests upon the petrous portion of the temporal bone. Two or three small fragments of bone were found lying in the bullet track through the lobe. No other part of the brain seemed to have been touched. The openings into and out of the lobe had been closed by their adhesion respectively to the adjacent dura mater and bone. The brain substance in the immediate neighbourhood was slightly softened, so that after the separation of the lobe the two openings had become enlarged.

The fracture of the skull and the position of the bullet were next examined.

As the portions of skull implicated, viz., the squamous and the tip of petrous portion of temporal bone, parts of great and small wing, and the body of the sphenoid were subsequently removed, together with the bullet, nerves, &c., the description of these, as seen at the *post-mortem*, can be easily followed on the preparation, and it will be observed that the inner aspect of the fracture exhibits a projection into the interior of the skull to the extent of three-quarters of an inch, this projection consisting of the inner table of the skull driven inwards into a sort of cone. In the interior of this cone are portions of the outer table, and projecting from the apex of the cone are others; whilst others, again, had been carried by the bullet and left in its track through the brain.

The bullet will be seen to rest against the extremity of the anterior surface of the petrous portion of the temporal bone, a little internal to and above the Gasserian ganglion, so that this ganglion was not compressed. The bullet is placed with its apex backwards and inwards, just as it had struck the petrous bone, and probably been stopped by it, the propelling force already considerably expended. A strong and dense envelope of false membrane attached the bullet to the wall of the cavernous sinus. At the time of the *post-mortem* this covering was complete, but has now been slightly divided at one point to show the bullet more completely: and now the apex is seen to be scraped, as it were, no doubt in passing through the bone, and portions of the scrapings are left in the track in the brain, and also in the cone-like eminence projecting into the interior of the skull.

The bullet is so supported and wrapped up by the false membrane, and hangs so loosely, that it would not seem to have produced any pressure upon the parts in its neighbourhood, but the third nerve is involved in the false membrane, and at the

post-mortem was seen for several lines back, from its entrance to the wall of the cavernous sinus, to be involved and covered with the matting of new membrane.

Dr. HEATH introduced Mr. Brumell, of Morpeth, and requested him to give some particulars of a case of paralysis following a gunshot wound, which had lately been under his care.

Mr. BRUMELL said: The subject of this communication was a young man, an agricultural labourer, 28 years of age, who first came under my observation and medical charge in June last. He had, about nine days previously, made an attempt to commit suicide by shooting himself with a small revolver in the right temple, and a small wound marked the spot where the bullet appeared to have entered. He had that morning been brought a distance of six or seven miles in a cab. When I saw him he was undressed and in bed. He was lying on his right side, with his face to the wall. He made no answer to my inquiries as to his state of health, but looked towards me with a vacant stare. The right eye was closed; and, as he appeared to be fatigued with his journey, I made no further examination at that time. When I saw him the following day, he was lying much in the same position, and had scarcely moved during the night. He had, however, slept at intervals, and was more communicative than on the previous day. He complained of pain in the head, principally in the forehead. I examined the wound on the temple, which was situated about half an inch above the zygoma, and two inches in front of the external auditory meatus; it appeared not much larger than a split pea. It was nearly healed, but by breaking down the adhesions I was enabled to pass a probe under the integuments, but could not succeed in getting through the deeper seated tissues; but I could distinctly feel under the temporal muscle an opening in the temporal bone corresponding to and apparently of larger size than the external wound.

The right eye was closed (complete ptosis), the levator palpebræ paralysed, and the upper eyelid resting upon the lower. When the eye was opened, the pupil was found to be dilated, wavering, and unsteady; but slowly contracting to the stimulus of light, the muscles of the eyeball, partaking in some degree of the paralysis, not moving in unison with the left eye: vision was not affected in either eye—the muscles of the face and tongue were not affected.

There was also complete paralysis of both extremities of the left side, over which he did not appear to be able to exercise the slightest power. His sensation, however, was not affected; he could feel the slightest touch in any part of the affected side; his breathing was not seriously affected, but more action on the right than left side of chest. The bladder had not been emptied for

twenty-four hours, but upon an urinal being put under him, and its use explained, he passed a large quantity of urine.

He had been more communicative to-day, and asked for food, which he swallowed without difficulty. After a few days, he became less reserved, and talked upon indifferent subjects without hesitation ; but, upon the subject of his injury, he remained silent, or said he could not give any explanation as to how it had occurred. About this time he exhibited an extraordinary craving for food, and declared that he felt starving, though at the time he was taking daily 34 oz. of bread, tea, a pound of beef made into beef tea, and one egg. This continued for about three weeks, until the paralysed muscles began to resume their functions.

After the lapse of a fortnight, or about three weeks from the time of the injury, the muscles began to resume their functions in the following order :—The levator palpebrae, and the muscles of the eyeball ; those of the lower extremity, and, lastly, those of the hand and arm. By the 1st of August the patient was able to leave his bed, and, with assistance, to walk across the room. He continued to make progressive improvement from this time till the time of his death, which took place in December, but from causes quite unconnected with the injury he had received.

I saw and examined him on the day previous. He was standing by the fire with a book in his hand, and said that he felt quite well, except the pain in his forehead, which he had complained of during the whole time, the seat of which he indicated by placing his fingers over the frontal sinus. His eyes had recovered their natural expression, and he was able to walk across the floor without assistance, but still dragging the left leg to some extent. His appetite had been good, and he had gained weight considerably.

Dr. EMBLETON showed a bursa taken from the arm of a gouty patient ; also some crystals of urate of soda from the contents of the bursa. The patient had suffered from the disease for some time. Many of the joints were affected, particularly the bursæ over the olecranon processes. The case was treated by benzoate and carbonate of lithia. Good diet, and a small allowance of stimulants. The bursa over the left olecranon process was removed by Dr. Beatson, under antiseptic precautions. The deposit over the other olecranon disappeared spontaneously a short time afterwards.

Dr. PHILIPSON presented a sphygmometer, an instrument for numerically registering the force of the pulse. He stated that he anticipated that the instrument would be of service, as an aid to the diagnosis of thoracic aneurisms ; also, in estimating the power of the heart, in cases of the continued fevers, more especially typhus and typhoid fevers, and with special reference as to the

effect of the administration of stimulants. Dr. Philipson remarked that the instrument had been made by Mr. Hawksley, of Oxford Street, London, and that the profession was indebted to Dr. George Oliver, of Redcar, for the invention,

Dr. BYROM BRAMWELL showed—

1. The heart and a portion of the right lung of a man, æt. 69, who died under his care a fortnight previously.

It was a typical example of encephaloid cancer. The new growth had apparently, as it usually does, originated about the root of the organ, and had then made its way along the lower bronchial tubes.

At the time of death, it had undergone softening, and when cut into, it presented a fungating appearance.

The upper surface of the liver contained two large nodules of cancer, the heart and pericardium being involved, and the surface of the heart being thickly covered with opaque lymph. As in many of these cases of intra-thoracic cancer, some of the symptoms closely resembled those of aneurism.

2. Cancer of the bladder.—The specimen was taken from the body of a man, æt. 40, who was admitted under his care on the 20th of December last, suffering from great œdema of the right leg and thigh. He stated that he had been ill a month, and that, previous to that date, he had enjoyed good health. The leg and thigh were enormously swollen, the skin of the right groin was hard and brawny, and presented several small tubercular elevations. The patient looked ill. The liver was slightly enlarged. After his admission, he rapidly got worse. The œdema of the leg and thigh increased. He became deeply jaundiced. Suffered for a day from convulsion fits. The swelling of the liver increased, and he died a fortnight after his admission. After death, cancer of almost every organ of the body was found to be present. The pelvis contained a solid mass in which was embedded the urinary bladder. All the abdominal organs were more or less affected. Numerous small nodules were scattered over the surface of both lungs. The membranes of the brain, chiefly over the right hemisphere, were affected with similar deposits; and, in connection with this meningitis, it is important to note that the optic discs, which were repeatedly examined, were normal—a most important fact, for one of the best diagnostic signs of basilar meningitis, and of tumour within the head, is the altered condition of the optic disc.

3. Hydatid cyst from the liver which had undergone a natural cure.—The preparation was a small and apparently insignificant one, consisting of a portion of a liver, containing in its interior a cyst the size of a walnut, filled with cretaceous material. The cyst was surrounded by a firm outer wall, in contact with which was a membranous sac containing putty-like material. Dr. Bramwell

said : I came across it casually in the *post-mortem* room, the other day, and from the characters I described to you, I came to the conclusion that it must be an hydatid cyst which had undergone a natural cure. This diagnosis was confirmed by microscopic examination. A very small portion of the cyst contents was placed on a glass slide ; a drop of strong nitric acid was then added, the greater part of the cretaceous matter was dissolved with the evolution of gas. A drop of glycerine was then added. This was covered in the usual way, and the slide was then put under the microscope. Hooklets were seen in abundance, and not only separate, but in some instances arranged in perfect rings. I have placed under the small microscope a very beautiful specimen prepared in the manner I have described.

EXHIBITION OF PATIENTS.

Dr. PHILIPSON introduced a patient with aneurism of the arteria innominata. The man was 36 years of age ; had been under his care in the Newcastle Infirmary for two weeks ; had complained of severe pain in the posterior part of the head and sides of the neck, and had suffered from severe paroxysmal, clanging cough, for eight months. Upon physical examination, it was observed that there was prominence of the right sterno-clavicular articulation, and that there was visible pulsation at this spot, and dulness upon percussion with increased sense of resistance. Upon auscultation, no bruit was heard, but two sounds, deep and prolonged, differing considerably from the heart sounds, heard over the cardiac region, which were without murmur. At the site of the pulsation, there was no thrill. The heart's impulse was in the natural situation. The man had been several years in the army, in a foot regiment, but for the last three years had been engaged at an iron foundry, and as a coal hewer. He admitted to having had syphilis twelve years ago. Dr. Philipson stated that he had come to the conclusion that this man was suffering from aneurism, in consequence of the alteration in the conformation, the visible pulsation, the dulness upon percussion, and increased sense of resistance, together with the signs of concentric pressure, namely, the pain in the back of the head and sides of the neck, from pressure upon the cervical plexus of nerves, and the paroxysmal, clanging cough, from compression of the recurrent laryngeal nerve. The absence of the murmur and thrill did not invalidate the diagnosis, as such signs may or may not be present. The arteria innominata was regarded as the vessel diseased from the position of the pulsation and the pain. By aid of the sphygmometer and the sphygmograph valuable corroborative evidence was obtained of the presence of a thoracic aneurism. The

sphygmometer indicated a difference of 45 grammes in the force of the radial pulses, the right being the higher; while the sphygmographic tracings showed a diminution in the force, a modification in the intensity of the incrotism, and a dissimilarity in the pulse of the two radial arteries.

Respecting the pathology of the formation of the aneurism, Dr. Philipson pointedly referred to the history of syphilis, because he believed that the poison of syphilis, when circulating in the blood, very seriously influenced the nutrition of certain tissues of the body, more especially a portion of the arterial tunics, namely, the elastic tissue of the internal and middle coats of the arteries. He surmised that in these tissues, as a result of an inflammatory process, lymph was effused, which, becoming fatty metamorphosed, engendered malnutrition of the innermost coat of the arteries, with subsequent erosion, excavation, and dilatation into an aneurism.

Regarding such as the interpretation of the condition, the patient had been enjoined quiet, but not confinement to bed, a generous, nutritious, but unstimulating diet, and the iodide of sodium internally, this treatment having been selected on account of its influence on presenting or arresting the tissue changes in constitutional syphilis. As it was inferred that the aneurism was not of large size, Dr. Philipson looked upon the case as one in which the joint opinion of the physician and the surgeon was desirable, and had invited his friend and colleague, Dr. Arnison, the corresponding surgeon of the week at the time of the man's admission, to examine the case. Dr. Arnison, after careful consideration, concurred in the opinion given, and regarded the case as a suitable one for the distal operation, and recommended ligature of the right subclavian artery, which operation he expressed himself as prepared to perform.

The sphygmographic tracings were shown.

Mr. JEAFFRESON said these cases were very difficult to diagnose, especially where there was no protrusion of the thoracic wall. He had lately had a case under treatment. In his case the symptoms were much better marked than in the case just shown to the Society. The patient had been examined by several of the most eminent medical men in Edinburgh, and no two of them were agreed as to the exact relations of the tumour. His friend, Professor Spence, had advised non-interference. The patient was kept in bed, and treated by large doses of iodide of potassium. The aneurism underwent a spontaneous cure. The patient is now well.

Dr. GIBSON said he had carefully examined the case, and had failed to recognise in it the characteristic features of an innominate aneurism. In the first place, there was no bruit. Secondly, when the carotid and subclavian arteries were compressed, the pulsation

in the tumour was not increased ; and, thirdly, there was no interference with the breathing.

Dr. PHILIPSON, in reply to Mr. Jeaffreson, stated that in the present case, where the aneurism was as yet small, the locality could be more readily determined than in those cases where the tumour was of large size, for it was possible to determine by percussion a clear space between the tumour and the aorta. He thought the signs enumerated by Dr. Gibson were of less importance than those he had described in introducing the patient. Several cases of intra-thoracic aneurism had been brought before the Society in which there was no bruit. The presence of dulness and of heaving sounds distinct from those of the heart, together with the difference in the radial pulses were, in his opinion, distinctive evidence that the case was one of aneurism.

Mr. JEAFFRESON thought it was more difficult to determine the exact position and origin of the aneurism when it is small. The relations, of course, greatly depend upon the nature and form of the aneurism whether it is sacculated or not.

Dr. ARNISON introduced a case of excision of the elbow joint. The child was only sixteen months old. The disease was so extensive as to necessitate the removal of the whole of the head of the radius and the lower end of the humerus.

NOTES OF TWO CASES OF OVARIOTOMY.

By C. S. JEAFFRESON.

MR. PRESIDENT AND GENTLEMEN,—The interest attaching to all cases of ovariotomy will prove my excuse for bringing the notes of these two cases before you this evening. One of them is of unusual interest from the size of the tumour which was removed, and together they are a good clinical illustration of some of the chief points connected with this class of operations.

In the month of April last, I was asked by my friend, Dr. Wm. Murray, to see Mrs. C., with a view to the performance of ovariotomy, and the following are the notes taken at the time:—

Mrs. C., æt. 26, is a pale, somewhat emaciated and unhealthy-looking woman. She has been married three years, and has one child aged 18 months. Previous to marriage she menstruated regularly. Since the birth of her child there has been a constant though slight sanguineous discharge. She suckled her child for six months, but at the end of that time was obliged to discontinue owing to weakness. During her early life she suffered from occasional attacks of epilepsy, and at the time of her confinement was the subject of puerperal convulsions.

The abdomen is occupied by a large tumour having all the characteristics of an unilocular ovarian cyst. Measurement in circumference at the umbilical level, 30 in. ; from the umbilicus to the symphysis pubis, 8 in. ; from ensiform cartilage to umbilicus, $8\frac{1}{2}$ in. Uterus of normal size somewhat high in the pelvis; not otherwise displaced and freely movable; length of uterine cavity, $2\frac{1}{2}$ in.

The history of the tumour was as follows:—After the birth of her child, 18 months ago, the abdomen did not subside so fully as she had anticipated. In the course of a few months it had manifestly enlarged. She did not, however, draw the attention of her medical attendant to it for some time after this. When she did so, the character of the growth was at once recognised.

During the last few months the tumour has almost doubled itself in size, but it has been entirely unattended with pain until the last month, when there has been considerable uneasiness in the right hypochondrium, and at this spot, when an attempt is made to cause the abdominal walls to glide over the swelling, a distinct crepitation is felt. The diagnosis arrived at was that of an unilocular ovarian cyst, with slight adhesions in front on the right side.

Looking at Mrs. C.'s failing health, the rapid increase of the tumour, and the inconvenience and trouble caused by its pressure, it was obvious this was a case calling for surgical interference. The circumstances of the growth were such as to induce one to

form a favourable prognosis, although, looking at Mrs. C.'s general condition, and bearing in mind the previous history of epilepsy and puerperal convulsions, one could not look upon the case as being one of the best for operation.

On April the 1st, chloroform having been administered, an incision $2\frac{1}{2}$ in. in length was made from the umbilicus downwards. The cyst being found adherent at this spot, the incision was continued downwards for another inch, where a non-adherent portion was reached. The cyst was now punctured with a trochar, and about five gallons of turbid serum removed. The fingers introduced into the peritoneal cavity separated some tolerably firm adhesions in the right hypochondrium, and the cyst wall was then easily drawn through the incision. The pedicle, which was somewhat short and thick, was found to be connected with the right ovary. It was secured with Spencer Wells's clamp. After the abdomen had been carefully cleansed, the wound was united by two superficial and two deep silk sutures. No vessels required ligaturing, and the operation from beginning to end did not occupy a period exceeding twenty-five minutes.

The symptoms of shock were far greater than had been anticipated ; but towards evening reaction set in. The following morning the patient seemed fairly comfortable, and promised to do well. The pulse was, however, unusually high. Towards night on the second day the temperature rose considerably, and there were symptoms of peritonitis. On the morning of the fifth day the patient died. *No post-mortem* examination was allowed.

In the month of June last, I saw, in consultation with Dr. Bonallo, of Cramlington, Mrs. D. She is a married woman, and has had nine children, the eldest being thirty-four years of age, and the youngest eighteen. She is very emaciated, and has well marked that peculiar expression of countenance common in chronic abdominal disease. Her health is completely broken down, and she rarely takes food without vomiting. There is considerable œdema of the lower extremities, but no evidence of cardiac renal or hepatic disease. Urine specific gravity, 1,020, normal.

An enormous tumour fills the abdominal cavity ; girth at umbilical level, 30 in. ; from ensiform cartilage to umbilicus, $10\frac{1}{2}$ in. ; from umbilicus to symphysis pubis, 9 in. ; from right ant. sup. spine of ilium to umbilicus, 12 in. ; from left do., 11 in. The tumour feels unusually solid and firmly fixed, although at one time she states that it had been freely movable. Fluctuation is obscure and limited to certain parts, and there is other evidence of the tumour being multilocular and probably partially solid, for I learnt that it had been aspirated in several different places, with the effect only of withdrawing a few ounces of very thick glary fluid, some of the punctures yielding no contents. The uterus was found

very high up, pushed somewhat to the right side, and apparently fixed. The length of its cavity was $2\frac{1}{2}$ in. The condition of the os and cervix were natural. There was much irritability of the bladder, and constipation.

The history of the tumour only dated back nine months, and when first observed occupied chiefly the left side. Its growth had been very rapid and regular. For the first three months her health had not suffered, but during the last six months there have been repeated attacks of abdominal pain, with elevation of temperature and other evidences of slight peritonitis. The patient, owing to want of strength and the great weight of the tumour, has not left her bed for many weeks.

The diagnosis arrived at was that of a multilocular ovarian tumour, with thick and solid cyst walls and very viscid contents, probably extensively adherent anteriorly, and with attachments to the uterus.

After a consultation, in which Drs. Murray, Hume, and Bonallo took part, it was resolved to urge the performance of ovariotomy, for, although the case seemed likely to be a difficult and complicated one, the patient's condition seemed desperate, and was such as to lead us to the conclusion that unless relieved of her sufferings her life could not be prolonged beyond a few months.

On June the 9th, the operation was performed. An incision 6 in. in length was made, commencing at the umbilicus and extending towards the pubes. The tumour was found extensively adhering in front; a large trochar was now introduced, but only a small quantity of thick, glairy fluid escaped, having the consistency of size. The introduction of the trochar was repeated in several different directions without producing much effect as regards the evacuation of the growth. It could now be seen that the tumour consisted of an infinite number of cysts of a varying size, with very thick walls and semi-gelatinous contents. An incision large enough to admit the hand was therefore made into it, and all the cysts were forcibly broken down with the fingers, until the tumour was converted, so to speak, into one large cavity. Enormous quantities of thick, semi-gelatinous fluid occupied this cavity, which did not, however, find its way into the peritoneal cavity, owing to the adhesions which existed at the margins of the incisions. The tumour, though now much reduced in size, remained of such proportions that it was obvious that it could only be removed by a very large incision. Accordingly the original one was enlarged upwards and downwards, till its extent reached a little more than 15 in. It was now found that the adhesion was pretty general in front, and on the right side was specially firm, there were some attachments to the omentum and under surface of the liver. Posteriorly the tumour was free from attachments, excepting on

the left side, where it had connected itself with the sigmoid flexure. The pedicle was attached to the left ovary ; it was exceedingly small and short, but contained some good-sized vessels. It was secured by a carbolized cat-gut ligature, and was allowed to drop into the pelvis, one end of the ligature protruding at the wound. Five or six vessels required ligatures, these were tied with carbolized cat-gut also, and their ends cut off short. The cavity of the peritoneum and the pelvis was now carefully cleaned. Previous to closing the wounds, I wished more carefully to examine the relations of the pedicle, and it was fortunate that I did so, for a small fold of the sigmoid flexure had by accident been included in the ligature ; this necessitated the application of a fresh ligature and the separation of the first. The wound was now united with six deep and six superficial sutures, the deep ones being silver and the superficial silk, the ligature of the pedicle being brought out at the lowest part of the wound. The estimated weight of the tumour and contents was 64 lbs.

The patient was put to bed in a very exhausted state, the operation having lasted about one hour and thirty-five minutes. An enema of brandy and beef tea was administered, and hot bottles placed at the extremities.

It will be useless to weary you with the detailed notes of the daily progress of the case. Reaction set in during the evening, when the temperature rose from 97 degs. at the time of the operation to $98\frac{1}{2}$ degs., and the pulse from 84 to 100. On the fifth day the wound was dressed, and it was found that the entire surfaces of the wound had united, with the exception of a quarter of an inch in the neighbourhood of the umbilicus, from which two or three drops of pus were discharged. On the eleventh day no action of the bowels having occurred, an enema was administered, and produced a copious evacuation, attended with much relief. From this time convalescence set in uninterruptedly, and in five weeks the patient left for her home. I have been visited by her lately ; she is in good health, and able to undertake her household duties.

Appended are the temperature charts of both cases.

REMARKS.

These two cases illustrate forcibly the uncertainty that attends prognosis in all cases of ovariotomy. On the one hand, we have a young woman with a unilocular cyst and scarcely any adhesions, who is subjected to an operation of comparatively short duration and severity, who rapidly succumbed. On the other, we have a person far advanced in years and broken down in constitution, submitted to a terrible and prolonged ordeal, passing through it unscathed, and restored to a life of activity. It is, however, the experience of those who have done a large number of these opera-

tions, that what are usually looked upon as "good" cases, by no means always turn out to be so when submitted to operation—those succeeding best in whom, through the result of a slow form of inflammation, some adhesions, and perhaps slight thickening of the peritoneum has taken place. In these persons, the type of inflammatory action (acute suppurative), which is most common to all serous membranes, becomes changed, the local inflammatory processes set up by the wound are more of an adhesive nature, and therefore less liable to spread and affect the whole of the peritoneal cavity. I think, too, that a not unimportant element in the chance of success is the fact that a patient has been confined to bed some time before the operation, and if this has been necessitated by the circumstances of the disease, so much the better. We see this illustrated in almost all classes of surgical operations, and though by no means the only one, it is without doubt one of the chief factors in the comparative safety of operations which are performed for disease, as compared with those which are performed for injury. In all cases which come under my care, if the patient is not confined to bed, I shall certainly insist upon her being so for at least a fortnight previous to the operation being performed. I would here also point out the difficulties which attend the diagnosis of what is a most important point to determine, viz., the existence of pelvic adhesions. They give rise to but few subjective symptoms. When attachments exist between the sigmoid flexure and the growth, there is frequently some irritability of the bowels and tenesmus when at stool ; when connected with the bladder, frequent desire to make water, and straining subsequently may exist, but these, to say the least, are most uncertain guides. The mobility of the uterus is usually looked upon as an indication of the tumour being attached or not attached to it. That this evidence may prove fallacious at best where the tumour is large, was proved in the last case which I have detailed. It was the opinion of most persons who examined this patient that some uterine adhesions existed, but at the time of operating none were found, and it was apparent that the great pressure to which the uterus had been subjected must have prevented any movement being communicated to it.

Although the means of securing the pedicle is a question which must in a great measure be determined by the exigencies of the case, I wish to point out how valuable the cat-gut ligature proved in the case of Mrs. D. It prevented all dragging upon the pedicle, a point, I think, of great importance, and enabled the abdominal wound to be accurately and carefully closed, which is not always easy when a clamp is used. Its removal gave no cause for anxiety, as that portion which remained within the abdominal cavity became dissolved, leaving the projecting portion to drop off about the twenty-eighth day.

Dr. HEATH said he quite agreed with Mr. Jeaffreson as to the uncertainty of these cases. He had now operated thirteen times; seven of these cases had been successful. In his opinion the success of the case greatly depended upon the solidity of the tumour. The most favourable case was probably a cyst, the contents of which were fluid, a cyst which could be readily emptied and removed through a small opening. He agreed with Mr. Jeaffreson that the case in which there were no adhesions often turned out to be unfavourable ones. It would seem that a virgin peritoneum was more liable to take on excessive inflammatory action than a peritoneum which has for some time been in a chronic state of inflammation.

Dr. GIBSON said he had lately seen a case with Dr. Keith, of Edinburgh. That celebrated ovariotomist had refused to operate, for he found a number of large nucleated cells in the fluid contents of the tumour.

Dr. EMBLETON asked how Dr. Keith had been able to examine the contents of the tumour without removing it by operation. He would also ask Dr. Heath how he could diagnose a unilocular from a multilocular cyst.

Dr. HEATH said it was generally easy to arrive at a correct conclusion as to the condition of the tumour by means of palpation.

Dr. GIBSON, in reply to Dr. Embleton, said some of the fluid contents of the tumour were withdrawn by a preliminary tapping.

Dr. BYROM BRAMWELL referred to the recent observations of Dr. Fowlis, of Edinburgh, who had examined the contents of numerous ovarian cysts, and had found in those cases where the large nucleated cells described by Dr. Gibson were present, the removal of the tumour was generally followed by a return of the disease. Dr. Fowlis thought these cells, escaping into the peritoneum, sowed themselves over the surface of the serous membrane, and developed into secondary growths. Dr. Keith, in refusing to operate, had no doubt acted on these observations of Dr. Fowlis.

Mr. JEAFFRESON said: The nucleated cells described by Dr. Gibson were not found in all cases of malignant disease. In a case in which he had operated, and in which the disease was unquestionably malignant, none were seen. With regard to the question of diagnosis, it was unnecessary for him, after the observations of Dr. Heath, to refer to the distinguishing features of unilocular and multilocular cysts, as Dr. Heath said it was generally possible to come to a correct conclusion in that case. A more difficult point was to determine the exact nature of the tumour where a small solid growth was present, surrounded by a large amount of ascitic fluid.

Mr. HOPGOOD related a case in which a solid tumour weighing 8 lbs. had been removed by ovariotomy. In that case a large quantity of fluid was present in the peritoneal cavity, and was thought to be ovarian.

Dr. HEATH thought it possible in most cases to arrive at a correct conclusion. The kind of fluctuation was quite different.

BRIEF NOTES OF A CASE OF SEVERE COMPOUND FRACTURE INTO THE ANKLE JOINT.

BY F. PAGE, M.D.

My object in introducing this case to the notice of the Society is not so much, Sir, to show a man who has recovered with a useful foot from a severe compound fracture into the ankle joint, though that of itself is sufficiently interesting, as to contribute my testimony to the efficacy of the treatment by which the result has been brought about. I remember hearing the late Mr. Syme say, "during the years I have been connected with the Edinburgh Infirmary, I never knew a patient suffering from a compound fracture into the ankle joint escape with his life, in my wards, where the foot was not amputated." We all know, however, patients do recover without amputation, both in private and in hospital practice, and it has been my pleasure to see some three or four good recoveries take place in this Infirmary, in the practice of different surgeons, under other than antiseptic treatment, but I never before knew a patient get well with a moveable joint, and I attribute this happy result in the present instance solely to the employment of Mr. Lister's method of treating wounds, thereby lessening the amount of discharge, and preventing disintegration of the cartilages. Six months ago, a railway truck passed over this man's foot.

I found a wound running obliquely across the inner part of the limb, extending from the heel over the ankle joint up into the leg for nearly eight inches. This wound was joined at about its centre by another, reaching to the ball of the great toe. Two fingers could be readily introduced into the ankle joint, and the astragalus could then be felt fractured. The scaphoid bone was disarticulated and considerably displaced. The finger could be passed under the soft parts of the sole, from the heel to the toe. There was a simple fracture of the fibula three inches above the ankle, and two

wounds on the outer side of the limb near the ankle joint. Mr. Lister's directions were carried out, a large drainage tube being introduced under the sole and into the joint, and no attempt was made to keep the parts in contact. During the process of recovery, a large flap of skin sloughed, part of the internal lateral ligament, and the end of the tibia to which it was attached came away, and there was an exfoliation from the scaphoid bone, but notwithstanding all this severe local mischief, there was never any amount of constitutional disturbance. The wound was very seldom dresssd, and the patient never for one day lost his appetite. There is now a moveable joint, and I see no reason to doubt that ultimately the complete use of the joint will be recovered. I would not for a moment wish to persuade myself or you that a single case, however successful, is to be regarded as proof of a superior method of treatment, but my limited experience of managing wounds by Lister's method has been so far satisfactory that I feel myself justified in citing the present case as a good example of what may be expected from it.

(The patient was introduced, and examined.)

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE fifth monthly meeting of the Society was held in the Library of the Newcastle-on-Tyne Infirmary, on February 10th, 1876; the President (Mr. Broadbent) in the chair.

The following gentlemen were elected members of the Society—

S. W. Rayne, F.R.C.S. (Eng.), Newcastle-on-Tyne.
James Wilson, L.R.C.P., Sunderland.
M. Brumell, M.R.C.S., Morpeth.
Wm. Mearns, M.A., M.B., C.M. (Aberd.), Gateshead.
James H. M. Ridley, M.R.C.S., Gateshead.

The following gentlemen were proposed for election :—

James Adamson, M.D., Hetton-le-Hole.
William M. Renton, M.D., M.R.C.S., Shotley Bridge.

A letter was read from Dr. Eastwood with respect to the Habitual Drunkards' Bill.

It was proposed by Dr. Foss, and seconded by Dr. EASBY, "That the President be authorised to sign a petition in favour of the bill."

Mr. H. E. ARMSTRONG proposed, and Mr. DODD seconded, an amendment, "That the matter stand over until the next meeting."

The motion was carried.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of January, 1876.

	ADMITTED.	DIED.
Typhus	3	—
Enteric Fever	3	—
Total	6	—

PATHOLOGICAL TRAY.

Dr. ANDERSON showed three vesical calculi.

The first, a phosphatic stone, was removed from a boy $4\frac{1}{2}$ years of age, by the lateral operation. The case did remarkably well; the patient was up and running about within three weeks of the operation.

The second was removed three weeks ago, from a boy $3\frac{1}{2}$ years old. He had suffered from symptoms of stone for some time. Two years ago he was sounded by Dr. Anderson, but no stone could be detected at that time. When he presented himself again, a month ago, the stone was readily detected. The wound was long in closing. The case is now doing well.

Both of these operations were performed in dirty pit cottages. In spite of the bad surroundings, the results had been most satisfactory.

The third stone was removed from the urethra of an old man. It could not be squeezed out or extracted by forceps. A slit was, therefore, made on the superior aspect of the glands; the meatus was by this means enlarged, and the stone, which was impacted just behind the orifice, fell out upon the floor.

Dr. BARKAS showed a large calculus, and said: I removed this stone from a man, *aet.* 24. The patient, a lead miner by occupation, was very delicate. The pelvis was much contracted; the space between the ischia measured only two inches. He had symptoms of stone when a child. From the age of eleven to fifteen his sufferings were severe; from the age of fifteen until within a short time of the operation his health was good. When I first saw him the urine was loaded with pus and mucus. The stone was at once detected by the sound, and was found to be smooth and large. After a fortnight's palliative treatment the lateral operation was performed. The greatest difficulty was experienced in extracting the stone: this was owing to the extremely narrow pelvis. It was ultimately removed by means of the finger introduced into the rectum. It was found to be a mulberry calculus, coated over with some black material. Its weight was three ounces and six drachms.

Dr. HEATH said the specimen was a very interesting one. It was almost as large as a mulberry calculus which he had in his collection. Should he meet with another case in which the stone was so large, he would remove it by means of the high operation.

Dr. EASBY showed a small calculus, triangular in shape, which had been passed during micturition by a female patient 17 years of age. There had been no previous symptoms, and the passage of the stone caused no pain.

Mr. GOWANS showed—

1. Some enlarged glands from a case of peritonitis. The patient was a boy, nine years of age. He died after three days' treatment. One of the glands was calcareous.
 2. The respiratory passages from a child who died of diphtheria.
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EXHIBITION OF PATIENTS.

Dr. ANDERSON showed a case of nystagmus occurring in a coal miner, and said: This was the first case he had met with in a most extensive colliery practice. Since the appearance of Dr. Charles Bell Taylor's paper in the *Lancet*, he had been on the look out for cases of the disease. The patient was 45 years of age. He had worked as a miner for twenty-three years. Four years ago he was laid up for fourteen weeks with rheumatism. Soon after resuming work he began to observe a peculiar feeling of coldness in the posterior part of the head, corresponding to the region of the cerebellum; he also felt a slight quivering motion of the eyeballs, and dimness of vision. He worked until eight weeks ago, when he was compelled to leave off work from his inability to steady his eyes and eyelids. He has been under treatment since, but as yet there is little improvement.

Mr. FIELDEN showed a boy, *aet.* 5 years, suffering from an enormous enlargement of the penis. The swelling first appeared three months ago. It was hard, nodulated. The induration extended far back towards the prostate. The penis now measured six inches in circumference. The boy's general health was good.

Dr. HEATH showed a patient who had suffered for some time from disease of the elbow joint. The case had been treated by poultices. The diseased bone had been gouged away. The treatment had answered well. The joint was now in appearance little different from the other. The movement was good.

This old-fashioned plan of treatment was a great contrast to the modern method (Lister's), which he had applied recently in a case of severe injury of the hand. This case had likewise done well. He intended to have shown this case, but the severity of the weather had prevented the patient coming to the meeting.

ETHER AND CHLOROFORM.

BY G. H. HUME, M.D.

YOU are aware that the subject of anæsthetics has lately undergone considerable discussion. The use of ether has been powerfully urged by one of the medical journals, which has, at the same time, freely opened its pages to the advocates of chloroform. Many points of interest have been raised in this discussion. But among these, the most practically important are—the degree of danger, attending the use of chloroform, the question whether this danger is unavoidable, and depending on the nature of the agent, or to some extent avoidable, because depending on modes of administration. And then, set against these questions with reference to chloroform, are the alleged comparative freedom from danger of ether and the practical convenience or inconvenience attending its use.

In introducing the subject here to-night, I am mainly influenced by a desire to suggest discussion upon it in the Society. The administration of anæsthetics is one of our every-day duties ; and seeing that, to some extent, the views of the profession as to the exclusive use of chloroform have been shaken, it seems only right that this Society should take the opportunity of forming and expressing some opinion on the matter. To be sparing of your time, I shall confine myself to offering as correct a statement as I can of the present position of the question ; and I shall refer to my own experience in the use of the two agents only in so far as this has been of use in helping me to the conclusions I venture to express.

To any one examining the literature of the subject, it comes as a surprise that so little exact knowledge should have been obtained concerning a drug so powerful and so universally used as chloroform. It has been in constant use for the last quarter of a century, and during that time it is known to have caused death in numerous instances. Yet it is a most difficult, almost an impossible task, to form any reliable estimate of the frequency of these fatal accidents. At the time Dr. Ransome wrote his book on Chloroform in 1865, the average he adopts of 1 death in 16,000 or 17,000 inhalations was no doubt generally accepted. More recently, the figures have been stated as high as 1 in 2,800 on an American authority, or 1 in 2,500 on the authority of Dr. B. W. Richardson. Probably these two estimates may be looked on as extremes, and the truth sought somewhere between them. I think, however, it would be found much nearer to the higher than the lower calculation.

During the last ten years, the *British Medical Journal* has fulfilled the self-imposed duty of recording every death from

chloroform, of which information could be obtained. Especially in the early portion of that period its notices were of the most meagre character. It had not been much the custom to chronicle chloroform deaths, owing to an idea which prevailed, at least amongst the public, that every such occurrence reflected discredit on the administrator. Necessarily, therefore, all such bare intimations of death from chloroform, given usually on second-hand authority, afforded a most untrustworthy basis for statistics. They offered no means of preserving what is recognised as a most important distinction between deaths *from* chloroform and deaths *under* chloroform, but not due to it. On the other hand, in many instances, and perhaps, without exception, in the last few years cases of fatal chloroform inhalation have been fully recorded and details given, on which could be grounded a conclusion as to the mode of death. For my own part, I believe that the precise estimate of the frequency of death from chloroform is matter of secondary importance. Of much greater importance is it that definite ideas should be obtained as to the modes in which death may occur : and on this point, the cases which have been fully reported—tested by the results of experiments on the lower animals—yield data for a fairly trustworthy generalisation.

In the first place, it is to be noted that nearly as many deaths have happened before the production of complete insensibility as after that stage has been reached. This fact, therefore, supplies an indication for a broad grouping of the cases ; but, in the first group, viz., those which have occurred before the full effect of the chloroform has been obtained, we are able to recognise important distinctions. Amongst such cases are, undoubtedly, instances of death from pure syncope, the result of terror or some such cause, and corresponding to numerous instances of sudden death in patients about to be operated on, which occurred in pre-chloroform days. But even in such cases there seems ground for believing that chloroform may increase an already existing tendency to fainting—a belief expressed by Sir James Simpson in a paper contributed to the *British Medical Journal* in 1870. Making due allowance for such cases, there must still remain a majority in which death has taken place after the administration has been continued for some time, and in which the result must, in fairness, be ascribed to the chloroform. In reading the accounts of these, one is struck by the frequency of the statement that an unusually small quantity of chloroform had been made use of. Often also it is stated that there seemed to be a certain intolerance of the chloroform—that the inhalation was unusually prolonged, or that violent struggling preceded the fatal event. In almost all such instances, however, of death during incomplete anaesthesia, where the sequence is marked at all, it seems to have been the heart's action

which failed before respiration stopped, and in these we may conclude that death was due to the direct influence of the chloroform on the heart. But it has also happened that the operation has been begun during this stage of incomplete anaesthesia, and the patient has suddenly died. Here another fact enters into the problem. Some years ago it was suggested by Mr. Bickersteth that "Many cases die from reflex spasm of the heart when the patient has had too little chloroform." The same explanation was suggested during a discussion which took place in Edinburgh on a case of "sudden death under the influence of chloroform," in the hands of Sir J. Simpson. Two speakers mentioned that they had noticed the occurrence of sudden, though not fatal, syncope, when the first incisions were made in minor operations. The same explanation has been quite recently elaborated by Dr. Lauder Brunton, and he has traced out, in the most interesting manner, the physiological rationale of this mode of death by reflex shock. For our present purpose it may be sufficient to point out that every interference with sensory nerves produces an impression which is transmitted to a nerve centre. In the conscious state, the impression would probably pass to the sensorium, and be recognised as pain, while it might also be reflected along the cardiac nerves to produce those effects of depression which we call shock. But it seems probable that pain is of salutary effect, in so far as it calls up a voluntary or involuntary condition of resistance, which seems to close the channels of reflex action, and hinder or moderate the occurrence of shock. In a state of partial anaesthesia, this resistance being a condition of the sensorium, which is the first part of the nervous system to be affected by chloroform will be lost, and the reflex influences which constitute shock will be transmitted unhindered. On the other hand, when the administration is pushed to the stage of complete insensibility, the transmitting power of the nerves themselves is more or less in abeyance, and no impressions are carried either to be recognised as pain, or reflected along the cardiac nerves.

In all the foregoing cases, a depressing action, direct or reflex, on the heart is clearly to be traced. The degree of interference with respiration, and the precise amount of danger arising from this cause are not so clear. Some estimate it lightly, whilst others, and especially Professor Lister, find in obstruction to the breathing the main source of danger under chloroform. Mr. Lister has drawn attention to, as he believes, the frequent occurrence of a laryngeal spasm, which is to be relieved not by a gentle pulling forward of the tongue, but by forcibly dragging it out of the mouth. According to his view, the measure he recommends acts not merely by opening the glottis, but by forcibly overcoming a reflex spasm of the vocal cords. Probably, this reflex spasm is not a frequent

accident, and where pulling forward the tongue sets free obstructed breathing, the hindrance has arisen from an incomplete effort of swallowing, or such loss of muscular tone as has permitted the tongue to fall back on the epiglottis.

What I have hitherto said has referred to cases of death occurring in the stage of incomplete anaesthesia. In the second main group of cases—those in which death takes place during complete insensibility—it results as much probably from stoppage of respiration as of the heart's action. These are the cases in which it has often been noted that the breathing and pulse seemed to fail simultaneously. In such, the mode of death is by coma, or in other words, by destruction of function of the medulla.

It does not fall within this line of inquiry that I should enter with any fulness into the physiological action of anaesthetics, or specially of chloroform; but there are two points having reference to the sources of danger from chloroform as to which experiment has corroborated clinical observation. In certain experiments made by a committee of the Medical and Chirurgical Society, and reported in vol. 47 of their transactions, it was found that, when the force of the blood pressure under chloroform was measured by the haemodynamometer, the mercury, after a transient rise at the commencement of inhalation, subsequently fell. The fall was in proportion to the influence of the chloroform which had been produced, and the experiment afforded direct proof of a continuous depressing action on the heart. The exact contrary occurred in administration of ether. Even when deep insensibility was produced, the mercury stood as high or even higher than at the commencement, and it was only when the administration had been pushed to such an extent as to interfere seriously with respiration that the circulation began also to fail. With regard to the other point—namely, the temperature—the contrast is not so marked. The condition of narcosis, however produced, is always attended with a lowering of temperature, and this happens, no doubt, in the case of ether as well as of chloroform. So far as I have been able to ascertain, comparative experiments are wanting to determine the exact amount of this loss of heat produced by the one and the other. I should anticipate, however, that ether-narcosis would be found to exhibit a much less considerable depression than occurs under the influence of chloroform. In favour of this view is the consideration that, of the two factors which produce the lowering of temperature in the case of chloroform, one is not operative in that of ether. Both hinder the process of oxygenation by their action on the blood; but, in addition, chloroform still further tends to lower the temperature by its depressant action on the circulation. I think also that experience in the use of the two agents fully bears out this argument, and that the surface of

the body is markedly less cold after prolonged ether than after prolonged chloroform inhalation.

Since the discovery of its anaesthetic properties by Simpson, chloroform has till lately been so exclusively used in this country, that we have no statistics with regard to ether to compare with the figures of chloroform-mortality. American writers tell us that ether is eight times safer than chloroform ; but in England the question is not yet in a position to warrant the acceptance of this, or indeed, of any precise estimate of risks. In advocating a preference for ether, therefore, I have made use of that class of arguments which is drawn chiefly from the nature of the drugs themselves. On the one hand, we have long used an agent for the production of anaesthesia powerful and most efficient, but at the same time one which is known to be every now and then the direct cause of death. The deaths ascribed to it have occurred under every variety of time and place and by every mode of administration. In the majority of instances, where it has killed, its fatal action has been such as could fairly be traced to its ordinary physiological effects. It has caused death by paralysis of the heart. And besides, the mere catalogue of deaths due to chloroform hardly sums up all that can be urged against its use. Its very potency and efficiency as an anaesthetic seem to make its administration an occasion of anxiety to the surgeon from the constant threatening of danger. Doubtless this threatened danger may seldom become actual or serious, but its possibility seems always present to the mind, and a certain fidgetty watchfulness is produced, which betrays suspicion of a servant too powerful to be entirely trusted.

On the other hand, we have in ether an efficient means of producing anaesthesia—not so powerful, but admittedly much safer. And as the constant occurrence of unpleasant symptoms was cited as one of the drawbacks to the use of chloroform, so the comparative immunity from these is one of the great advantages of ether. What is urged, in brief, is that ether is a perfectly efficient anaesthetic—safer than chloroform—and attended with so slight additional inconvenience in its use as not to justify its rejection on that ground.

Certain objections usually urged against the employment of ether require to be stated in more detail. First of all, its vapour is said to be so irritating and unpleasant in its quality that patients can scarcely be induced to breathe it. Besides, a large quantity is needed to produce anaesthesia, and the copious after-exhalation, which goes on for some time, keeps the air of the sick room charged with ether-vapour to a disagreeable extent. No doubt this objection is in the main a just one. The vapour of ether is more irritating than that of chloroform, and if the administration be pushed too vigorously at the beginning, cough and a feeling of suffo-

cation will be produced. But all difficulty of this kind can usually be overcome by a little patience on the part of the administrator, and a few encouraging words during the first inhalations. To those who find the vapour of ether exceedingly unpleasant, its presence in the atmosphere for some time after the administration may be an objection of some force. But, practically, I have not often found this to be the case. Some, indeed, who previously had inhaled chloroform have expressed a decided preference for ether, as being to them less disagreeable.

An objection to the use of ether of greater practical weight is that bronchitis is apt to be caused by it. On *a priori* grounds, the prolonged inhalation by a vapour of low temperature might be expected to be followed occasionally by this result. Probably, however, the condition is more often due to an unusual mucus secretion, which, in more moderate degree, is always one of the results of ether inhalation. Very soon the secretion ceases and the lungs gradually clear themselves. At the same time where a habitual tendency to bronchitis exists, or where lung irritation is actually present, it would be advisable to give chloroform.

As experience in the use of ether accumulates, and sufficient data are gathered for a fair comparison with chloroform, it will no doubt be found that there are circumstances and cases in which the latter for special reasons possesses such advantages as an anæsthetic as must influence our choice. Mr. Jonathan Hutchinson has probably indicated such an instance in advising the use of chloroform rather than ether in cases of extremely rigid arteries. And another is suggested by a case which occurred, I believe, to Mr. Furneaux Jordan, in which it was found impossible with ether to procure that steadiness of the limb which is desirable during the ligature in its course of an important artery. Narcosis in this case was pushed to its extreme extent without overcoming a muscular tremor, which seriously interfered with the progress of the operation. In speaking of the modes of administration of the two anæsthetics, I may be very brief. Observation and the history of cases in which death occurred have alike forced on me the belief that safety is best attained when the patient is brought rapidly under the influence of chloroform. When the early stages are protracted, the risk of paralysis of the heart appears to be increased. Probably the explanation of this is that once the cerebral hemispheres are fully affected and insensibility produced, the risk of a dangerous impression on the medulla and pneumo-gastric nerves becomes materially lessened; and we know that on account of the much richer vascular supply of the hemispheres they must become anæsthetised proportionally much sooner than other parts of the nervous system, when chloroform is liberally given. As to the

mode of giving, I know no means so good, or indeed so safe, as the ordinary napkin or towel. It may be removed or approached to the patient's face at will, and so roughly, but I believe quite sufficiently, the dilution or concentration of the vapour regulated. Complicated inhalers and apparatus have not justified the cost they involve by any additional safety to the patient or convenience to the surgeon.

In the same way, ether is best given by the simplest means. Probably its introduction into practice has been more retarded by attempts to use the ingenious but often useless machines devised by instrument makers than by any other cause. A cylinder or cone of flannel, into the closed end of which is tied a sponge to receive the ether, forms a perfectly satisfactory inhaler. Sufficient stiffness is secured by using several layers of flannel. There is, however, an important gain in having the closed end of the cylinder formed by only a single layer, as it permits the passage through it of the half-condensed aqueous vapour from the breath, which would otherwise freeze in the sponge to such an extent as materially to check evaporation. Air must be admitted or excluded as the case seems to require, but usually it is best, and I believe quite safe, to adapt the margin of the inhaler to the face, and from time to time allow the vapour to be inhaled undiluted. Given in this way, the administration seldom occupies more than two or three minutes longer than would be the case with chloroform.

Dr. GIBB said he had used chloroform a very great many times, and had never seen any bad result. He lately saw a gentleman who had taken ether, and who had suffered so much during the inhalation that he would on no account whatever again be subjected to its influence. Dr. Gibb asked all the members who had given ether to hold up their right hands. (Seven hands were held up.)

Dr. HUNTER said he had never seen any inconvenience from the use of chloroform. He asked if ether caused sickness after the administration.

Mr. FIELDEN said he had used ether frequently. In one case only had it caused sickness, and that was the first case in which he had given it. It had never caused any unfavourable symptom.

Dr. PAGE said he had frequently given ether. He did not think it had any advantages over chloroform. A much larger quantity of it was required. He often gave a mixture of ether and chloroform, equal parts. This mixture produced anaesthesia much more quickly than ether alone. For long operations, he thought it better than chloroform, as it did not cause so much depression and was not attended with so much after-sickness. This was very important in ovariotomy. He had never seen any unfavourable result from the administration of chloroform. He thought many

of the chloroform deaths were due to carelessness and inattention on the part of the administrator. Most of the fatal cases were those in which the anaesthetic was given for some trivial operation. Carelessness was more likely to occur under these circumstances.

Mr. MORGAN said he had given ether several times during the last year-and-a-half. He only used it in those cases where for any reason chloroform was disagreeable or counter-indicated. He did not think it had any advantage over chloroform. A certain number of deaths must occur during the administration of any powerful remedy such as ether and chloroform. He himself had never seen any injurious results from chloroform.

Dr. EASBY said he had used ether a few times. In his hands it had not caused vomiting, but there had been headache and excitement for some days after its administration.

Mr. MORDEY DOUGLAS said the subject was one of very great importance. It was of the utmost consequence to determine which was the safer anaesthetic. The inconveniences were of no real consequence, the danger was the all-important point. Chloroform and ether were generally given when the patient was in the recumbent position. He could not admit that this was right. It would be better to give the anaesthetic to the patient in a sitting position. If anything went wrong, the method of Nelaton—viz., inversion—would then be more likely to be of benefit. If a patient could not resist the drug when sitting, its administration is unadvisable. In some diseases, chloroform should not be given. Diphtheria was one. In tracheotomy for ordinary croup, some operators gave it apparently with good results.

Dr. JACKSON thought chloroform much more fatal than ether. He thought many of the deaths occurred at a late stage of the administration. In proof of this was the fact that in midwifery practice, where chloroform was largely given, its use was absolutely, up to the present time, safe, no death as yet having occurred from its administration during parturition. In midwifery it was not generally necessary to cause profound anaesthesia. It is evident, therefore, that chloroform does not kill when given in small quantity.

Dr. PHILIPSON complimented Dr. Hume on his very admirable paper. The question was one of great interest to all members of the profession. In the administration of any anaesthetic, we introduce into the blood a powerful drug, and hence must add to the danger of the patient. The chief danger was from paralysis of the heart. The physician was often consulted in cases where it was necessary to give chloroform, and in which the patient had heart disease. He had always given it as his opinion that, in those cases

where there was simple valvular disease unattended by structural change in the muscular tissue, the administration was desirable and safe. If, however, the muscular substance was degenerated—more especially if there was fatty degeneration—the administration was contra-indicated. In cases of dilatation there was also danger. He agreed that it was best to give chloroform freely and boldly, there being less danger where anaesthesia is rapidly produced.

The PRESIDENT said he had given chloroform for twenty-five years in all sorts of cases. He was perfectly satisfied with it. He had never seen the slightest danger from its use. He had never tried ether; he was so satisfied with chloroform that he never would.

Mr. JEPSON said he had given chloroform on many occasions, and had never seen any ill effect. He thought it best to give it freely. In large operations the patient should be previously prepared. He agreed with Dr. Philipson that chloroform might be given where there was heart disease. In one case in which he advised its administration there was a loud murmur.

Dr. BYROM BRAMWELL said : It is important in the consideration of this subject to ask ourselves what is a good anaesthetic? I would define such an agent as a substance which produces anaesthesia with the least amount of danger and with the least amount of inconvenience. In the first place, then, is chloroform more dangerous than ether? Dr. Hume, in his most admirable paper, has looked at the subject, chiefly from a physiological point of view, and has shown that chloroform is a depressor of the heart, ether a stimulant. On physiological grounds, then, ether is to be preferred. Dr. Hume has not considered the statistical side of the question. Chloroform has as yet been almost exclusively used in this country. We have not therefore the necessary data, in British practice, to settle this all-important point. In America, however, ether is most extensively used, and the number of recorded deaths is comparatively small. American writers say ether is much less dangerous than chloroform. If American statistics are to be relied upon, and I see no reason to doubt their accuracy, ether is much less dangerous than chloroform. This opinion is very much strengthened, when we consider the mode of death in the two cases. In the case of ether, death, when it does occur, is caused by asphyxia during the stage of profound coma. In the case of chloroform, half the deaths occur from the same cause; the other half occurred during the preliminary stages and are due either to reflex spasm, to paralysis of the heart, or to true anaesthesia of the lungs themselves. It has been argued that many of these deaths are coincidences. If such were the case, we would have an equal number occurring during the preliminary stages of ether narcosis,

granting, of course, that we compared an equal and sufficiently large number of administrations of ether and of chloroform. It has also been said, that many of the chloroform deaths are due to carelessness; such no doubt is the case, but most of these deaths occur from asphyxia during the stage of coma. Deaths from carelessness would therefore be just as liable to occur during the administration of ether. In my opinion it is impossible, in the face of the American statistics, to avoid coming to the conclusion that ether is less dangerous than chloroform. This is the main fact to determine. In some other respects ether is no doubt inferior. A larger quantity of it is required; it is not, therefore, so portable; it does not produce anæsthesia so quickly, and it is not so agreeable to the patient.

Dr. HUME said he felt some difficulty in replying. The subject was such an extensive one, and so many points had been raised during the discussion, that it was impossible to consider them all. Dr. Bramwell, in his remarks, had followed out exactly his line of thought, and had fully considered the relative fatality of ether and chloroform. He so entirely agreed with Dr. Bramwell's views that he would not open that part of the subject. He thought the argument advanced by Dr. Gibb and many others hardly went to the root of the matter. Dr. Gibb said I have given chloroform for many years and have never seen any dangerous symptoms. I am well satisfied with it, and will, therefore, continue to use it. Such an argument did not prove that chloroform is innocuous—for it only kills once in about 3,000 administrations, hence although in this part of the country no deaths have occurred, yet in some other part there may be two or three which make up the average. Dr. Hume had seen no inconvenience from the use of ether. He had given it now fifty times. In only two instances had sickness followed. He had noted the time required to produce complete anæsthesia. The average of the whole fifty cases was two or three minutes longer than with chloroform. He always gave it as strong as possible. He was much interested in Dr. Philipson's remarks, and agreed with him that in simple cardiac valvular disease anæsthetics could be safely recommended.

FACIAL OR BELL'S PARALYSIS.

By R. W. FOSS, M.D.

ONE or two points render the following case not uninteresting, markedly the great relief to the pain experienced from the hydrate of chloral, and the recovery of the patient from the attack.

The patient, a master plasterer, is 71 years of age, and has had unexceptionally good health the whole of his life. In the early part of November, 1875, he noticed a soft pulpy swelling in the upper part of the mastoid process of the left temporal bone, but which, at first, was not painful. About the 3rd November he began to suffer from intense throbbing pain of the left ear, with pain shooting right through the head. The whole of this side of the face, together with the ear, was extremely sensitive to the touch. There was complete deafness on this side, and the patient said that the hearing on the other side was occasionally diminished. After a few days an abscess of this (left) ear burst into the external meatus, and a copious purulent discharge thereafter commenced, without, however, any relief to the feeling of intense pain. During this time the other bodily functions were performed normally. The discharge from the ear began to diminish in quantity, but the pain (notwithstanding means to the contrary) did not lessen in intensity. On Saturday, November 20th, he suffered much pain, which left him rather suddenly during the night. In the morning he discovered that he was unable to spit, and, looking in the mirror, found the left side of his face distorted. On examination, it was found that the muscles of the angle of the mouth were drawn to the right side, and obliquely upwards. When he attempted to spit or whistle, the buccal muscles of the left side, instead of contracting, puffed out. He could perfectly close the right eye, but the left upper eyelid continued permanently unclosed. Tears occasionally trickled from this eye on to the cheek. The pupils of both eyes were normal. Sensation on this side was perfect. The pain in the neighbourhood of the ear was gone. The tongue was protruded straight in the mesial line. There was considerable thickness and indistinctness of speech. There was no desire for solid food owing to the difficulty of mastication. The patient said that his tongue felt as if it were too large for his mouth, no doubt due to the absence of the resisting power of the left cheek muscles. The palatine arch of the left side was narrower than that of the right. The uvula was indubitably curved to the left or affected side. He slept better and took a moderate amount of fluid nourishment, the pulse was 80. The bowels were costive. The taste was normal. The muscles of the rest of the body were natural. On asking him to contract the eyebrows, the right side

moves perfectly, but there is not the faintest movement on the left side.

26th November.—He suffers occasional paroxysms of pain along the left side of the head, extending from above the ear almost to the occiput ; after these attacks of pain wear off, he notices an increased purulent discharge from the ear. The face is much the same. There is an epiphora of the left eye. The tears, he says, scald the eyelid as they pass on to the cheek. The left side of the nose feels dry and closed as if, he says, he had had a blow on it. The tongue is coated with a white fur. The appetite is good for fluids. The bowels are still costive. He has had better nights recently, although he cannot lie on the affected side on account of the pain.

2nd December.—Is pretty easy to-day. He had a paroxysm of pain commencing about the 30th of November, and terminating yesterday morning with a copious discharge of pus. There is some tenderness over the left mastoid process. The muscles of the left side of the face have gained a little power. He can move them all except those of the frontal region. The pulse is 72. The appetite is improving. The bowels are now regular and he sleeps well.

12th December.—The paralysis of the face has entirely gone. The left ear is still seriously affected, there being frequent severe pain. At various times he received great relief from the hydrate of chloral internally.

There can be little doubt that the paralysis in this case was due to pressure on the facial nerve somewhere in its course, probably in the petrous portion of the temporal bone. The diagnosis of the disease or injury affecting the nerve in its passage through the bone rests, according to Romberg, not only in the co-existence of such phenomena as otorrhœa, removal of necrosed portions of bone, perhaps of one or other of the small bones of the ear, and deafness—symptoms which are not likely to occur in cases of simple peripheral facial palsy, and, further, upon certain peculiarities in the observed paralytic phenomena. One of these is a diminution of taste on the side of the tongue corresponding to the palsy, another is a unilateral paralysis of the velum palati. On both these points authors differ.

The unilateral loss of taste in my patient was never remarked, although there was an absolute loss of appetite and disinclination to take food into the mouth, on account of the feeling he had of his tongue being too large.

There was a distinct narrowing of the palatine arch of the left side, with a decided slanting of the uvula to the same side. It is the implication in the diseased condition of whatever nature that may be of the nervus petrosus superficialis major of Arnold, which,

taking its origin from the knee-shaped bulb on the trunk of the portio dura as it lies in the Fallopian aqueduct, and which communicates with Meckel's ganglion, whence the muscles of the palate derive their nerves, that is the view of Romberg (as quoted by Dr. Warburton Begbie) causes the displacement of the velum and uvula. In the beginning of January this year (1876), the discharge had ceased and the pain was gone. He remained well, although weak and very much attenuated, till about the end of January, when, in consequence probably of leaving the house too soon, symptoms of pleuro-pneumonia of the left side began to show themselves, which led to his death, in the early part of February, from simple exhaustion.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE sixth monthly meeting of the Society was held in the Library of the Newcastle-on-Tyne Infirmary, on March 9th, 1876; the President (Mr. Broadbent) in the chair.

The following gentlemen were elected members of the Society—

James Adamson, M.D., Hetton-le-Hole.

William M. Renton, M.D., M.R.C.S., Shotley Bridge.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of February, 1876.

	ADMITTED.	DIED.
Scarlet Fever	2	—
Typhus	8	2
Continued Fever	1	1
Total	11	3

Six of the cases of Typhus were from one family. One of the fatal cases of Typhus was that of a pupil-nurse, who contracted fever in the discharge of her duty. She died on the nineteenth day of illness. The other was the mother of the family above alluded to. She was delivered of a living child about eight hours after admission, and died from exhaustion on the fifth day after parturition, and the twelfth of fever.

The case entered as Continued Fever was that of a woman, aged 73 years. The history was very imperfect. On reception she was found to be suffering from fever, without characteristic eruption or other distinctive symptom. She died about eighteen hours after admission.

PATHOLOGICAL TRAY.

Dr. PHILIPSON presented a liver, stomach, and large intestine, illustrating structural syphilitic lesion. The patient, a boiler maker, aged 35, drunken and dissolute, was admitted into the Newcastle Infirmary, under his care, on February 14th, 1876,

but only survived his admission twenty hours. He was much emaciated, his abdomen was greatly distended, and fluctuated. It was ascertained from his friends that he had suffered much from vomiting, and that his bowels, from being constipated, had become obstructed. There were no chest or brain symptoms. At the autopsy, the peritoneum was found distended with turbid serosity, it was much thickened and studded with projecting masses, resembling in size and in appearance boiled rice, the stomach and intestines being thickly studded with these masses. The large intestine, especially the transverse, descending, and sigmoid flexure of the colon was thickened, punctured and contracted in calibre; at one point the constriction was so complete as to cause closure of the canal, the ascending colon and small intestine being widely dilated and distended. The liver, on the convexity of its right lobe exhibited white, hard, star-like cicatrices. On section, no gummatous changes were observed, nor was the colour changed with a strong solution of iodine. The kidneys were normal. The spleen was small. The brain was natural. The aorta was opened throughout, and was found healthy. The heart and lungs were also healthy. Under the microscope, the white cicatrices from the liver and the round masses from the large intestine were seen to be composed of an indurative connective tissue. These specimens illustrate the profounder lesions which are produced during the later stages of syphilis, and known as "tertiary," in which deposits of tough, white connective tissue are found in the liver and other organs, which have a distinctive power of contracting and thus producing a fissuring or lobulation of the surface. The specimens are of interest clinically, for they show, firstly, that ascites may be dependent upon syphilitic changes in the peritoneum, and, secondly, that structural syphilitic lesion of the large intestine may occasion obstruction of the bowels.

Dr. PHILIPSON exhibited the kidneys from a case of uræmia. The patient, a furnace-man, aged 23, had been under his care in the Newcastle Infirmary. At the time of his admission he was in a semi-conscious state, suffering from clonic convulsions, anasarca and highly albuminous urine. For a time, under the administration of diaphoretics and hydragogue purgatives, the convulsions lessened in severity, but a sudden accession occurred, followed by death.

The kidneys were mottled, a little smaller than normal, tolerably hard and inelastic to the touch. The capsule was stripped off with ease. The surface was beset with curiously whorled yellow markings, contrasting very markedly with the reddish gray of the intermediate parts. On section, this singular alternation of yellow and reddish gray extended throughout the

whole of the cortex. Microscopical examination proved that the yellow part consisted of the epithelium of the uriniferous tubes filled with oily particles, while the reddish gray substance between them was made up of tolerably vascular connective tissue. The heart was hypertrophied, especially the left ventricle, without there being any disease of the valves or large blood-vessels existing to retard the flow of blood. The brain was ex-sanguine, but in other respects normal. The combination of a moderate degree of contraction of the kidneys with fatty degeneration of the tubular epithelium indicated a combination of parenchymatous with interstitial inflammation. This supposition was supported by the condition of the heart, for it is in chronic interstitial degeneration of the kidneys that hypertrophy of the heart is met with as a complication ; hence it may be presumed that this condition had been for some time in existence, and that parenchymatous inflammation had suddenly supervened. In consequence of the blood becoming more contaminated with excrementitious materials, the symptoms of uræmic intoxication, ending in death, had developed.

Mr. MORGAN showed a specimen of congenital enlargement of the thyroid gland, and said : This, sir, is a specimen of congenital cystic disease of left lobe of the thyroid. It is formed partly of hypertrophied gland tissue, and partly of cysts developed in its substance. The solid parts of tumour so surrounded the trachea, vessels and nerves, that extirpation would have been quite impossible. The disease is interesting itself from the curious train of symptoms it gives rise to, and also when contrasted with the goitre endemic among people who drink water from the magnesian limestone, and also with the form of goitre occurring in those who are wasted by hyper-lactation or other exhausting causes.

The little patient presented at birth a soft elastic tumour, occupying the left side of the throat, from the clavicle to the mastoid process. At the upper part behind the ear its cystic nature was very evident. Even from the first the child's wheezing respiration showed that there was pressure upon the trachea. During the first few months there was almost constant cough and difficult breathing, but after a time there were intervals of comparative health ; and at a year old, when this photograph was taken, the intervals were of two or three weeks' duration, during which the child seemed well, and took its food and thrrove. But it always had a markedly anæmic aspect, and during the exacerbations of the disease wasted much. These exacerbations were interesting in their symptoms. The child would become pallid and cold, refuse his food, breathe with difficulty and cough, and be very restless ; and his temperature would rise to 102 or 103—the tumour would enlarge

and become painful, and on one occasion the dyspnoea was so great that I tapped the cyst, with an aspirator, and drew off 4 oz. of serous fluid, with marked relief. After two or three days' suffering the attack would subside, and the child be restored to his ordinary health. I found that constitutional treatment with quinine and cod liver oil had a most happy effect upon the disease. The intervals of health were prolonged, the attacks were shorter and less severe, and the tumour was evidently diminishing in size. My patient was, however, seized with scarlatina of a very severe form, and, after a gallant struggle, succumbed at the end of the third week.

In reply to Dr. Gibson, Mr. MORGAN said there was no evidence of cardiac disease.

Dr. BRAMWELL showed, for Mr. Fielden, a microscopical specimen of the head of the tape worm *Tænia Medio-canellata*.

Dr. BRAMWELL showed a microscopical specimen of the head of the tape worm *Tænia Solium*.

Mr. JACKSON showed a specimen of scirrhus of the breast. He had removed it from a woman, aged 27. It first appeared during the early months of pregnancy, and increased much during lactation. The chief point of interest was the age of the patient, and the fact that her mother died of the same disease when 33 years old.

WHAT IS A GENERATION OF MEN?

By D. EMBLETON, M.D.

THE term "a generation," is usually taken as having an indefinite meaning, and appears to have borne different significations in different nations at various points of their existence.

The Hebrews reckoned by the generation, and assigned various periods of time to it at different epochs ; in the time of Abraham it was 100 years ; Moses used the term for 38 years, and in later times 10 years were called a generation.

The Greeks also had a similar considerable variety of signification for the same term.

We do not, I believe, know what was the length of a generation among the Romans.

Dr. Latham, in his dictionary, quoting Calmet, states that "by some of the ancients a generation was fixed at 100 years, by others at 110, by others again at 33, 30, 25, and 20 years ; but it is remarked that the continuation of generations is so much longer as they come near to the more ancient times." We do not know, at this day, on what grounds these vague and varying estimates were made.

The estimates of a generation arrived at by the ancient Egyptians we find recorded by Herodotus, in chapter 142 of the second book of his History, and it is sufficiently definite. Among other curious, interesting and valuable details occurs the following passage :— "Thus much the Egyptian and other priests related, showing that from the first king to the priest of Vulcan who reigned last were 341 generations of men, and during these generations there was the same number of chief priests and kings. Now, three hundred generations are equal to ten thousand years, for three generations of men are one hundred years. A generation, therefore, at that time, was considered to last, on an average, thirty-three years and a third.

Herodotus was in Egypt at or about the year 450 B.C., but doubtless the information he then obtained was nothing new at that time, but had been familiar to the Egyptians and their priests for ages past. It is now well understood that these were very observant and accurate people, who, from time then immemorial, had been in the habit of keeping records and registers of the heavenly bodies, of times, of events, of the births and deaths of their people, of domesticated animals and their young, of domesticated birds and their eggs, and of many other matters and things, so that we may fairly assume that their definite determination of the length of a generation had been settled after long and close observation and calculation, and was not a mere assumption handed down by

tradition from their ancestors. It is possible, however, that this computation may have reference only to the upper classes.

To come to modern times, and to our own country, in a recent and valuable little work, dated 1874, and entitled, "Statistics of Families in the Upper and Professional Classes," obligingly sent to me by Mr. Charles Ansell, jun., actuary of the National Life Assurance Society, I find the length of a generation thus defined: "The length of a generation, in the sense here intended, is the mean period that elapses between the births of parents and the births of their children, or, in other words, the number of years that persons are, on the average, younger than their fathers and mothers."

From Mr. Ansell's tables it results that "the average intervals between the births of fathers and mothers and the births of their children are, 36·66 years for fathers, and 32·30 years for mothers respectively. The mean of these intervals is 34·48 years."

"This result is closely approximate rather than rigidly accurate, there being several possible sources of a minute amount of error involved in the mode in which it has been deduced. Not one of these sources of error separately could exercise any material influence on the final results, and some of them, so far as they would operate at all, would do so in different directions from others, and it is probable that the balance of their effects, if capable of estimation, would be found to be unimportant."

"For all practical purposes, therefore, it may be considered that the average length of a generation among the upper and professional classes in this country is $34\frac{1}{2}$ years."

This conclusion is based on returns and calculations made from a total of 11·103 marriages, resulting in the births of 53·365 children, occurring in the ranks of the nobility and gentry, and in the clerical, medical, and legal professions, and is perfectly reliable.

It is, therefore, not a little remarkable that there should be found so close an agreement between the estimate reported by the father of history, in 450 B.C., and probably arrived at 2,000, nay, perhaps 3,000 years ago, or even before then, and that made only last year by the actuary of an English Life Assurance Society, the ancient Egyptian priests giving $33\frac{1}{3}$ year, as the length of a generation by the banks of the Nile, and the modern actuary assigning $34\frac{1}{2}$ years as the length of the same in the upper and professional classes of England.

It may be objected that the Egyptian estimate relates, not to a generation as defined by Mr. Ansell, but to the mean duration of human life; well, but it is curious to observe how closely the length of a generation, according to this gentleman, agrees with the mean duration of human life in England.

In Dr. Lardner's *Museum of Science and Art*, vol. viii., 1854, it

is stated that the mean duration of human life in England and Wales, during the forty years ending with the year 1840, varied from 31 to 37 years, the variation, however, not being regular, its mean value being 34 years; again, our friend, the excellent officer of health of this town, Mr. H. E. Armstrong, has kindly shown me that the Registrar-General, in his 34th annual report, that for 1871, gives the mean age at death of persons born in England as 40·86 years, and in that for the next year, 1872, as 41 years.

Both of these last estimates include all classes of the population, but if they had been founded only on the classes corresponding to those in Mr. Ansell's tables, most probably the numbers given by the Registrar-General would have been somewhat lower, for the insuring agricultural classes, not included by Mr. Ansell, are confessedly long lived, and they form no inconsiderable part of the population.

It appears that the duration of life has been extended since 1840, and probably also the length of a generation has increased. However, the near correspondence of the length of a generation and the mean extent of life, though computed from separate and distinct data, is a matter worthy of notice, and perhaps of record; doubtless both would be considerably augmented were the provisions of the Public Health Act of 1875 fully carried out in all its details.

NOTE.—Since the meeting at which the above was read there has appeared a "Supplement to the 35th Annual Report of the Registrar-General of Births, Deaths, and Marriages in England." From Dr. Farr's letter in this most valuable work, I hope I may be excused culling the following passage (page iv), the latest attainable and the most reliable expression of the present length of human life, and that of a Generation of Men in England, "There is, finally, a relation betwixt death and the mean lifetime of man; if a life passing through a given time is represented by a line, death is the point of termination, as birth is the point of origin. And a generation of men born together is represented by an indefinite number of such lines of life. The natural lifetime of man is a century; that age under ordinary conditions is, as the Etruscans remarked, attained by at least *one* in every considerable generation, and they made it their *seculum*; as in that time are passed through all the phases of childhood, youth, manhood, maturity, and monumental age. The mean lifetime in the healthiest districts of England—and in the healthiest ranks—is 49 years, and we have no evidence that under the most favourable conditions it exceeds 50 years."

Mr. BRUMELL said he had known six generations of one family. They were not, however, all in a direct line. The eldest was born in the middle of last century; the youngest, six years ago.

Dr. EASTWOOD said he had listened with great pleasure to Dr. Embleton's paper. He was much interested in the subject, and had made some observations on it himself. The length of a generation, according to Herodotus, was $33\frac{1}{3}$ years. This no doubt was near the mark, but did not, in Dr. Eastwood's opinion, quite apply to modern times. Dr. Eastwood thought 30 years about the average. Taking his own family from the year 1665 ; on the father's side, a generation equalled 35 years ; on the mother's, 32 years. He had also gone into the Royal Families of England and France ; and as a result of his calculations, he was inclined to think the length of a generation in the present day was about 30 years.

Mr. H. E. ARMSTRONG said there were many fallacies in the subject. He thought Dr. Eastwood's calculations were open to the objection, that the result was derived from a small number of families only, and that those families belonged to the upper classes of society.

Dr. EMBLETON said Mr. Ansell, whom he had quoted, had only taken the upper and middle classes, and had expressly stated so in his paper. Herodotus had probably drawn his results from the upper classes also. If this were the case, it was a remarkable fact that the length of a generation amongst the Egyptians and amongst ourselves was about the same. The Egyptians were a people who took a great deal of care of themselves.

PAPER ON HYDATIDS OF LUNG AND GALL BLADDER,
ENDING FATALLY AFTER TAPPING BY MEANS
OF PNEUMATIC ASPIRATOR.

By T. F. HOPGOOD.

MR. PRESIDENT AND GENTLEMEN,—The case I wish to bring before your notice to-night is one of hydatid of the lungs and gall bladder, and it is doubly interesting on account of the position of the disease, and also on account of the fatal termination. The position of the cyst was a point of great interest, and I trust you will pardon me in making a few remarks upon this subject. Hydatids have been found in almost all parts of the body. Troussseau says the liver is the most common seat, and after that more especially the thorax. Communications are sometimes formed between the bile ducts and hydatid cysts, owing to the latter in the course of their growth destroying the walls of the hepatic ducts in their vicinity in the same way as they force a passage into the bronchi and intestinal canal, or the large blood vessels. Thus we not unfrequently find a number of bile ducts communicating freely with the interior of a cyst, the contents of which become mixed with bile, with consequent death of the echinococci. Sometimes it happens that the vesicle escapes from the interior of the sac into the bile ducts, and becomes impacted there, causing dilatation of the duct, and ultimately passing into the gall bladder or the bowels. Charcellay has recorded a case of echinococcus of the liver which communicated freely with the bile ducts and the hepatic veins. The veins were filled with pus, a compressed and flattened vesicle, $2\frac{1}{2}$ inches, lay in the lower part of the ductus choledochus, and another was impacted in the opening of a bile duct in the wall of cyst. Dr. Begbie says the hydatid bladders pass from the open mouths of the bile ducts, and becoming impacted there occasion the dilatation of the ducts, and ultimately pass into the gall bladder. Dr. Budd gives the history of a case of Dr. Bowman's, of Birmingham, in which the following is a portion of the *post-mortem* description:—"Several of the biliary ducts emptied themselves into the cavity, but the most remarkable circumstance was that the gall bladder itself communicated with it, and contained, instead of bile, a number of hydatids floating in a gruel-like fluid. The opening into the gall bladder was circular, about the size of a writing quill, and situated near the duct. The hydatids in the bladder were too large to pass through this opening, one of them being the size of a filbert and well distended."

This case is too long to give in full, but there was present severe jaundice, evidently showing that the bile was not flowing properly away through the gall bladder.

Dr. Cobbold has lately given a very interesting list of the cases contained in the Pathological Museum of the Metropolis, amongst which are hydatids of the pelvis, femur, tibia, and humerus, the liver, spleen, heart, kidney, uterus, ovary, omentum, brain, lung, orbit, axilla, mesentery, septum of heart, region of bladder, neck, breast, lumbar region, broad ligament, bladder, diaphragm, and region of the prostate, &c.

In the *Cyclopaedia of the Practice of Medicine*, the situation of the disease is given in a series of 383 cases, collected by Davaine, and amongst them, in addition to the situations mentioned by Mr. Cobbold in his series, are the following:—Testicles and scrotum, suprarenal capsule, vesiculae seminales, placenta, in the hip, in and on the abdomen, spinal cord, in the pulmonary artery and vein, pituitary gland, face, mouth, thyroid, eyeball, in the anterior thoracic, and abdominal walls.

In addition to the above, the echinococcus has been observed in the pancreas and in the psoas muscle.

The chief points to which I wish to draw your attention in the following case are:—

1st. The size of the cysts in the gall bladder, with no dilatation of the duct.

2nd. The state of the lung in which the hydatid was found.

3rd. The use of the aspirator in this case.

4th. The sudden termination, and the cause of such taking place.

CASE.—Ed. R., æt. 29, labourer, was admitted into the Sunderland Infirmary on April 1st, 1874, under Dr. Bowman, and I have to thank him in being allowed to bring this interesting case before your notice.

Fourteen months before he became an in-patient, he presented himself at the Dispensary amongst Mr. Morgan's out-patients, and it was here that I first saw the case. There was at that time a distinct tumour over the gall bladder, round, fluctuating, painless, and elastic. There were present no signs of jaundice; there had been no injury; the man had not been abroad, and the tumour was diagnosed as one of hydatid of liver. He was given iodide of potassium in 10-gr. doses three times a-day. On his next visit, Mr. Morgan and myself both examined him carefully, and advised him to go into the Infirmary. The tumour appeared about the same size; but, in addition, he had pain in his left side, and there were present distinct friction sounds.

From this time he was not seen until he presented himself at the Infirmary, when he had dulness over almost the entire left lung; respiration almost absent, and voice sounds *nil*. The tumour had greatly increased in size. He was taking his food well, and complained of no pain, but had a slight cough. There was no difficulty in breathing, except on exertion; there was slight enlarge-

ment of the left side, and bulging of the intercostal spaces. At the apex the dulness was not quite so marked as over the rest of the chest, and there was slight respiratory murmur heard over the same portion. He was treated for a short time with medicine, but as it gave no beneficial results, and the tumour had increased in size, the abdominal hydatid was tapped with aspirator on 19th April, when about 8 oz. of fluid was withdrawn, of a pale colour, and containing hooklets of the echinococci. From this time the tumour gradually became smaller, and with the exception of slight pain over the puncture, which was relieved by a poultice, the tapping gave rise to no bad consequences.

On April 24th, it was decided to tap the chest, as the other was progressing so favourably, and the aspirator was again used. Upon withdrawing the first syringeful he complained of difficulty of breathing, and great pain, but it passed off in a few seconds ; but the next time the tap was turned, and before two ounces of fluid had been withdrawn, he was seized with intense pain and difficulty of breathing, the skin became blue, frothy fluid mixed with blood came from the mouth, and in two minutes he fell back dead.

Artificial respiration and galvanism were used, but without any signs of returning animation.

POST-MORTEM.

To make the description of the *post-mortem* as short as possible, I may say that, with the exception of the lung on left side, the liver and the surface of peritoneum just over cyst, the other organs of the body were natural. Upon opening the chest the left side was nearly filled with fluid, and the heart was pushed over to right side ; upon removing the fluid the cavity seemed to be empty, but after some difficulty, the remains of the lung tissue were removed, and it was then found that a hydatid cyst had evidently commenced to grow from the centre of the lung, as the remains of the lung could be detected over the entire surface of the chest wall, but adherent to it. The lung tissue was flattened out to the thickness of $\frac{1}{4}$ to $\frac{1}{2}$ inch all round the cyst and the bronchi, and everything had disappeared from the pressure of the hydatid, with the exception of the large bronchus and its primary division, which had, at their termination, the hydatid cyst and the remains of the lung tissue. The heart was contracted, but contained a clot in the right side. Upon opening the abdomen there were adhesions over the seat of puncture, but they were readily detached. Over the position of gall bladder was a tumour, the size of a child's head, and as we knew that it was this which was tapped and furnished the hydatid fluid, we searched in vain for the gall bladder, but upon closer examination we found it was the gall bladder which was enlarged ; upon opening this it was found to contain a cyst, which was placed in

close contact with the interior of the gall bladder itself; inside of this cyst was a daughter cyst nearly as large as the mother. The large cyst was of a dark green colour outside. The inside of a lighter colour, and sacculated; it was soft, thickened, and some parts of it were soft and putty-like, breaking down easily under the finger. The fluid it contained was of a greenish tint, but much lighter than the bile contained in the gall bladder and its outer coat.

The daughter cyst was of a very light colour, nearly white, and contained clear fluid filled with echinococci.

The liver itself was natural in every way, the capsule easily stripped off, and there were no signs of any inflammatory action having taken place.

1st. As regards the size of the cysts in the gall bladder with no dilatation of the duct.

The large cyst was about the size of a child's head, and the daughter almost as large, and the duct was only slightly, if at all, enlarged. It is impossible that these could have entered the gall bladder from any other part, and it is, therefore, evident that they must have grown in that situation. The deep colour and the thickened state of the mother cyst points to its having been for some time in contact with bile, whereas the daughter cyst was almost white, and only showed signs of having been washed with the fluid contained by its parent.

There is no doubt in my own mind that the puncture made by means of the needle of the aspirator was the cause of the slight attack of peritonitis and of the bile, having obtained access to the interior of the larger hydatid, and its consequent softened condition.

2nd. The state of the lung on the left side, in which was placed the other hydatid. When he was first seen at the Dispensary, there were no signs of anything being wrong with the lungs; there was no pain or other symptom present, but upon the second visit, when he complained of pain in his side, there was slight dulness over the lower lobe and distinct friction sound. Not having the opportunity to again examine him until he was received into the Infirmary, it is only fair to conclude that the pleurisy which was present gave him no further trouble, and that the hydatid continued to increase in size, for upon admission, as you have heard, there was almost complete dulness upon that side, loss of the respiratory murmur, total absence of vocal fremitus, and slight bulging, the heart being pressed over to the right side.

One remarkable circumstance was that, notwithstanding the total destruction of the left lung, the patient only showed slight signs of shortness of breath upon walking fast, the right lung evidently having taken on double duty by the slow process by which the left had been damaged.

3rd and 4th. The use of the aspirator and the cause of the death of the patient. These, I think, are the most important points in relation to this case, and it is a matter upon which, perhaps, some of you, having had cases, will give your experience. The reasons why the aspirator was used in this instance were, that it was considered to be perfectly safe, more easily used, and causing less pain.

The aspirator, as you all know, has been used to tap the bladder, in hernia, in pleurisy and pericardial effusion, and with satisfactory results. There is no doubt that the operation is very simple, and less troublesome than with the trocar and tube under water, and the pain the least which can be given.

Now, as regards the cause of death, and I may here read you a portion copied from a paper by Henry Barnes, M.D., physician to the Cumberland Infirmary, in the September number of the *Practitioner*, headed, "Some Remarks on Paracentesis of the Chest." In the cases in which I have quoted the operation has been performed twenty-nine times, and in no case did bad results follow. On one occasion there seemed to be a tendency to faint during the operation, and the proceedings had suddenly to be suspended. This, I think, was clearly due to the extremely feeble condition of the patient. Of 820 cases collected by Evans in only two did death follow the operation. Again, he says, what is of more importance and deserves more attention, is the fact that, in some cases albuminous expectoration quickly follows the operation, and may cause alarming symptoms, and even death. When the amount expectorated is only small, the symptoms are mild, but if it be excessive it leads to distressing dyspnoea, spasmodic cough, and death by asphyxia, resulting from the accumulation of the fluid in the bronchial tubes.

The symptoms came on in from ten minutes to an hour after the operation. Pinault first pointed out the occurrence of this albuminous expectoration after thoracentesis, and it has led to much discussion among French physicians. Amongst the causes which have been assigned for it may be mentioned perforation and pulmonary congestion, giving rise to transudation through the alveolar walls. Dr. G. Johnson attributes it to absolute blood stasis in the minute pulmonary vessels, especially in the pulmonary veins.

A fatal case is reported by Dr. Ernest Legandre in a recent number of the *Gazette des Hôpitaux*. About three litres of pink, turbid fluid had been withdrawn by means of Dieulafoy's aspirator, and the patient experienced marked relief, but in a very short time dyspnoea returned; there was a copious outpouring of the secretion into the air passages, cyanosis and death from asphyxia in about five minutes.

What was the state of the chest in these cases reported by Dr. Barnes after the tapping?

CASE 1.—Paracentesis, with Bowditch's syringe, 66 oz. removed, dulness diminished, bronchial breathing heard over the left chest.

CASE 2.—Bowditch's syringe, 46 oz. removed, operation suspended on account of tendency to faint. Shortly after operation respiratory sounds audible over the back of right chest, and the intercostal spaces became visible to eye. 2nd operation: 56 oz. removed, percussion gave a clear note down to the middle of the scapula. 3rd operation: 123 oz. removed; a small quantity of air entered the chest on the following day, right chest was quite clear anteriorly, and normal vesicular murmur audible. Posteriorily there was clear percussion note as low as one inch below angle of scapula, and respiratory murmur feeble but natural. If you will read this paper you will find the same thing occurring throughout the whole series.

Now, allow me to examine the case I have brought before you this evening. The aspirator was used, and at first 4 oz. of fluid withdrawn, the patient complains of a little difficulty in breathing, but it passes off and gives no warning of danger; it is applied again, and less than 2 oz. withdrawn when symptoms of asphyxia show themselves, intense dyspnoea, livid countenance, the albuminous frothy fluid comes from the mouth tinted with blood, and in less than two minutes death closes the scene.

Now, what was the cause of death? I believe it was due to the impossibility of the lung to expand, or for the chest wall to fall in sufficiently to replace the fluid withdrawn. This is what happened: 4 oz. of fluid was withdrawn, and the over-distended chest wall fell back to its fullest extent; then came the withdrawal of the next fatal 2 oz., and here there was a call upon the sound lung; it was drawn over to fill up the vacancy; inspiration was impossible; expiration also impossible, the small vessels of the lung gave way, fluid was poured out into the bronchial tubes, and asphyxia followed.

As regards the relative merits of the trocar and the aspirator, I must say that the former seems the safer mode of procedure, and for these reasons I should give it the preference. There is no danger that air enters the chest during the operation if the tube be used under water, and the opening made into the chest wall, if followed out as directed for operating for paracentesis, is closed as soon as the instrument is withdrawn. Only that amount of fluid is withdrawn which the lung expansion can replace, and in case of there being flakes of lymph, the larger sized tube allows of their easier escape. I must apologise for the length of this paper, but as I consider it an important subject, both as regards the use of the aspirator and also as to the mode of death, I have ventured to trespass upon your time so long.

Dr. BRAMWELL said he had listened with very great pleasure to the paper. The case was a most interesting one, and very well recorded. Dr. Bramwell thought it was rare to find the organ in which the hydatid developed itself, so completely destroyed as the lung seemed to have been in this case. He felt some difficulty in accepting Mr. Hopgood's explanation as to the mode of death in this case. The amount of fluid was very small, only six ounces. In many cases, where a large quantity of fluid was drawn off without any bad result whatever, one lung was firmly bound down by adhesions or completely carnified, yet no fatal result followed. He had a patient at present under his care, who had been twice tapped with the aspirator. The first time, 180 ounces were drawn off. In that case the lung did not expand at all.

HYPERTROPHY OF MUSCULAR ORGANS.

By CHARLES GIBSON, M.D.

THE subject of hypertrophy is very interesting and very extensive: extensive even when its relationship is limited to the muscular organs; and still a large subject when it is confined to the hypertrophy of hollow muscular organs. This paper refers to hypertrophy as it affects the heart and the uterus only.

The condition of hypertrophy is not by any means necessarily the outcome of morbid change. It may exist physiologically just as it may exist as the effect of diseased action. And there is a striking analogy and similitude in the modes of development, of progress, and of termination, between its physiological and its pathological forms. True physiological hypertrophy is probably only to be found as the consequence of pregnancy. The uterus, indeed, enlarges normally at the catamenial periods; but this enlargement is brief in its duration; it is the consequence of sanguineous engorgement, and passes away with the menstrual molimen. There is no excess of nutrition here, and the condition is not one of true hypertrophy. The uterus enlarges, too, in consequence of the growth of tumours in or on its walls; as a consequence of versions and flexions, and other displacements of the organ; of stricture of the os or cervix uteri; or of abnormal conditions of the vagina or of the vulva. These enlargements are true hypertrophies generally, and maintain an existence long after the obstructive causes which called them into being have passed away. But they are not physiological. They are developed by a vigilant and active and powerful *vis medicatrix naturæ*, which takes on excessive force to compete with resistance or to overcome obstacles. Once called into existence, however, these hypertrophies are never afterwards entirely removed; and they themselves become *impedimenta* in the further life history of the affected individual. The phenomena, then, are pathological. The large loose embryonic fibre-cells which are strewn abundantly in the midst of the developed fibres of the normal unimpregnated uterus take on, in many instances, such as related, an enhanced activity; additional fibre is produced; and the hypertrophy of the previous muscular constituents becomes associated with, and supplemented by, new tissue. There is numerical increase of the muscular fibres: there is hyperplasia of the organ. But there is usually more than this. The presence of a foreign body, or even the irritative influence of a strictured cervix uteri, brings about recurring efforts of the uterus to overcome—to remove—it; brings about at the same time excessive engorgement of the organ; sets up even inflammatory action; deposition takes place; and the hypertrophy is confirmed. The hypertrophy, then, is essentially pathological.

The marvellous hypertrophy of the uterus in pregnancy is a magnificent study. From the first moment of the reception of the impregnated ovum into the uterine cavity, the uterus becomes loaded with blood, and this engorgement never ceases, for the shortest space of time, during the whole period of normal uterine gestation. The ovum is dropped from the orifice of a fallopian tube into the soft, pulpy, vascular, decidua; it holds its ground; it increases in size; it enlarges the sphere of its attachments; and soon presses upon its enclosing walls—presses with a force which is fairly proportioned with—which is perhaps precisely in the ratio of—its own growth. Does the uterine wall resist the onward growth of the uterine contents? and does the peristalsis of the uterine muscular fibres, constantly observed in advanced pregnancy, hold in the beginning or in the earlier stages of it? Is the growth, then, of the muscular fibres the result of sustained opposition to the pressure from within? and then, as the uterine contents increase still further in bulk, is the development of fresh fibres from the embryonic fibrecells, a necessity which arises in consequence of the separation from each other of the old fibres, in the gradual expansion of the uterine walls, and the demand for a stronger opposition to the enlarging ovular mass? Perhaps these questions will never be completely and satisfactorily answered, but an affirmative reply to them appears to be in complete harmony with careful observation and with admitted facts. And there are certain phenomena in this form of uterine hypertrophy which can easily be authenticated. The uterine walls are intensely engorged during pregnancy. The uterine fibres are opened up—separated. New fibres are produced in vast abundance, and with great rapidity. Channels are formed in the walls of the uterus, which were not known to exist before. The whole organ steadily enlarges. The nutritive changes are unassociated with pain or disease. No lymph is effused into the uterine tissues and organised there. The hypertrophy is indeed physiological. And when the healthful process has been completed and the contents of the uterus have been normally discharged, the new fibres undergo transformation and become absorbed, the older ones become reduced in size, the sinuses become obsolete and disappear, to a large extent at least, and the uterus returns to a condition so nearly that which held before conception that experts, even, as in the recent case of Harriet Lane, are unable to say, with precision, whether it has been impregnated or not. The hypertrophy cannot be indefinitely prolonged. The fibres of the hypertrophied organ undergo retrogressive changes—undergo a fatty degeneration. Necrobiosis is established in their midst, and their absorption rapidly and steadily follows. Is this fatty change in the uterine fibres antecedent to, or consequent upon, parturition? No fatty deposits have hitherto been found in the

fibrous tissue of the uterus before the parturient efforts have been set up, and it is unreasonable to suppose that degenerate fibres could be employed in the contractions of the uterus in normal parturition. But it is certain that fatty changes do take place in the placenta and membranes of the ovum some time before the period of their expulsion from the uterus, and this change is almost certainly influential in determining the duration of normal gestation, while the fine sympathies which always exist between the uterus and the mammary glands are, doubtless, largely concerned in all these phenomena. The products, too, of the metamorphosis of the uterine tissues are useful in the work of the mammary glands in the production of milk. Stimulation of the mammary glands by the waste particles which have been carried into the circulation from the uterus, as by the application of extraneous irritants, is reflected upon the uterine walls. (Scanzoni and others have systematically produced abortion by the application of cupping-glasses to the mammae.) Certain it is that the balance between contained and containing parts becomes destroyed, and that this destruction of exact relationship is followed by parturition. Now all this appears to justify the belief that the phenomena of parturition are brought about before the fatty deposits have materially hurt the contractile power of the muscular tissues of the uterus, and that the degeneration of the uterine fibres, is really and entirely consequent upon and subsequent to the parturient process. The hypertrophy of the gravid uterus then is strictly physiological, and this hypertrophy is removed by a process of fatty degeneration. And whether any degenerative change takes place before parturition becomes established or not, it may be accepted that the great result of removal of the hypertrophy is really due to a grand muscular effort—to a contraction of the whole uterus; so that the blood supply of the organ is very greatly reduced, and the nutrition of its muscular fibres consequently very greatly impoverished.

Now, there is a startling analogy between the development of hypertrophy of the uterus and of hypertrophy of the heart; and the analogy is sustained in the degenerative changes which affect the hypertrophied tissues. Atrophy of voluntary muscles is known to follow on prolonged repose, as increase of volume is known to follow on exercise of them. But their increase of size has a limit which is determined at the time of their development—a typical limit which may not be overstepped by any amount of exercise. Such a law as this, however, cannot be predicated of the heart; and its muscular constituents are susceptible of an increase which altogether transcends that which may be recognised as its normal type. Its hypertrophic progression cannot, indeed, go on for ever; but it is interrupted only by the superior force of superimposed disease—usually by complication with fatty degeneration—or by

death itself. Hypertrophy of the heart, however, is commonly the associate of disease, whilst that of the gravid uterus, as we have seen, is of a strictly physiological character. The suggestion has been thrown out in this paper that the incentive to development in uterine hypertrophy may be the instinctive resistance in the uterine walls to the pressure from within of the growing ovum. This suggestion receives support in the analogous facts which hold in the genesis and in the progressive development of hypertrophy of the heart. For it is everywhere recognised that the excessive growth in the heart is due to a necessity for increased power which has its origin in obstructive interference with the sanguineous circulation. The relationship between the cardiac contractions and the elasticity of the blood vessels is accurately sustained in the healthy man. When, however, this balance is lost, in ever so slight a degree, the organs of circulation have entered upon a career of actual disease. This may be initiated by mere mental causes ; for if the force of the cardiac contractions is frequently excessive, enlargement of the muscular structures of the heart is a natural result. This is shown in the manifestations of hypertrophy in persons who have suffered much from palpitation of the heart. Even the excessive use of alcoholic or other stimulants will, if long continued, eventuate in enlargement of the muscular tissues of the heart. It is possible, however, that in many of these cases an injurious influence may be exerted directly upon the lining membrane of the heart, as it is most certainly upon the arteries from time to time. And the similarity herein manifested with the development of cardiac hypertrophy often, found in Bright's disease, is remarkable. The circulation of the waste renal products irritates the muscular fibres of the finer arteries, and the sum of their contractions affords a large resisting power to the onward movement of the blood. Contractive resistance of the heart is set up, and hypertrophy gradually becomes developed. But the cardiac stimulation may be effected by violent bodily exercise persistently repeated. Here the excessive muscular contractions carry the blood forcibly against the walls of the gradually narrowing blood-vessels, which cannot transmit the contained blood with a velocity proportionate with the violence of the contraction of the central organ of circulation. The resistance is met by still greater effort on the part of the impelling organ, excessive muscular growth follows, and the cardiac hypertrophy becomes established. But hypertrophy of the heart is almost a constant result of the development of the gravid uterus, the heart increasing up to one-fifth more than the normal weight. And yet this enlargement is found almost only in the walls of the left ventricle. This condition is most probably the result of aortic tension set up by the pressure of the gravid uterus upon the large

arteries of the abdomen. The hypertrophy, however, is only temporary. It increases with the increasing uterus, and it disappears after parturition. The great cause, then, of cardiac hypertrophy is obstruction to the circulation of the blood. This obstruction may exist in the heart itself, or it may exist in the blood-vessels. The heart takes on exalted action when its channels are narrowed, as in contraction of its orifices and in diseases of its valves; the latter commonly involving also a regurgitation of blood already impelled by the heart, and demanding reiterated efforts to maintain the circulation.

Many forms of abnormality in blood-vessels, in addition to those already referred to, are concerned in the development of cardiac hypertrophy—narrowing of the aorta or of the pulmonary artery, for example. Expansions too, as is shown in aneurism of the aorta, wherein a developed pouch in the course of the vessel constitutes a distinct obstacle to the circulation of the blood, every contraction of the aneurismal sac throwing back a fresh quantity of blood; or it may be that the sudden widening of the blood channel effects such a change in the rapidity of the current as demands additional heart force to compensate for the delay.

The blood-vessels possess two principal properties—elasticity and contractility—and the work of the heart is materially aided by this elasticity and contractility, for, *ceteris paribus*, just as the elasticity of the blood-vessels is great so is the resistance to the onward flow of each wave of blood little. Contractility is feeble in the large arteries, and is hardly to be detected in the veins, but it is found to be powerful in the minute arteries, as we have seen, in which, indeed, modern anatomical investigation has shown abundant muscular fibres. The elasticity and contractility then of the blood-vessels, and the frictional resistance to the onward movement of the blood current on the one hand, and the impulsive agency of the heart on the other, are the grand factors in the production of vascular tension; that tension of the blood-vessels—of the arteries, which is so necessary to the healthy circulation of blood, and the perverted action of which is so influential in the production of disease, and especially of cardiac hypertrophy—that arterial tension which is changed in different parts of the body, according to their functional needs, by the regulating influence of the vaso-motor innervation. Perverted conditions of this vascular tension are necessarily associated with changed force in the central impelling power. The heart is required to be equal to the task which is imposed upon it. An obstacle which opposes the course of the blood is assuredly a grave thing, but it greatly loses its importance when the heart is able to assume a force which is equal to the enhanced difficulty of circulation—when the impelling force can surmount the obstacle. When, however, the propelling power of

the heart is compromised, actual danger has begun—danger which increases as the impediments to the onward flow of the blood increase; but as the propelling power of the heart increases, there takes place enlargement of the organ—enlargement both of its capacity for blood and of its muscular walls. A hypertrophied heart is always a dilated heart. The principal inconveniences attached to affections of the heart are referable probably to lesions of its motility, and the development of hypertrophy may, therefore, be regarded, *pro tanto*, as salutary. This provident agency, however, does not extend beyond a certain limit. Accumulating obstacles are not always met by enhanced propulsive power equal to the force of the obstacles; a time arrives when the heart cannot propel efficiently. The obstructive forces tend towards increase; the propulsive power diminishes. The struggle between the opposing forces may be prolonged; but the hypertrophy can only advance so far. The growth of muscular fibre being interfered with, fatty degeneration takes place, and steadily advances. The various organs become engorged with impure blood, and death supervenes in consequence of injuries so sustained, or it takes place from rupture of the heart itself. And now, let us finally notice that a very influential agent often at work in the production of fatty degeneration of the hypertrophied heart is, that which results from high tension or over-distension of the aorta. This tension being sustained eventuates in loss of contractility, just as its atheromatous or calcareous degeneration does, and as the aortic contractility is the power which propels the blood required for the nutrition of the cardiac tissues, through the coronary arteries, the loss of such contractile power, step by step, diminishes the arterial supply afforded by the coronary arteries to the heart's structures becomes impoverished, and fatty degeneration, true necrobiosis, is the inevitable result.

The analogy, then, between hypertrophy of the heart and its retrogressive changes, and hypertrophy of the gravid uterus, and its retrogressive changes, is certainly remarkable. It is, however, almost certain that in the latter form of hypertrophy the degenerative changes affect chiefly or exclusively the muscular tissues which have been developed during the pregnancy, while in the hypertrophy of the heart the fatty degeneration is observed throughout the hypertrophied structures.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

AN adjourned meeting of the Society was held in the Library of the Newcastle-on-Tyne Infirmary, on the 13th April, 1876; the President (Mr. Broadbent) in the chair.

PATHOLOGICAL TRAY.

The SECRETARY exhibited, for Dr. Mackay, of Crook,

1. A vesical calculus, removed from a patient, æt. 26 years. The patient was a labourer, and had experienced pain and difficulty in making water since his childhood. He was able to follow his employment with regularity until December last, when the symptoms became so intolerable that he consulted Dr. Mackay, of Sunderland, who sounded him, and at once detected a stone in the bladder. The urine at this time was highly ammoniacal and purulent. There was great irritability of the bladder, and the patient's general appearance was indicative of great suffering.

On January 26th, Dr. Mackay, of Crook, performed lithotomy and removed a large stone. The calculus was composed of oxalate of lime, with a covering of phosphates; weighed 2 oz. 1 drachm. The case did remarkably well. The wound was healed, and the patient was at work in three weeks after the operation.

2. An eyeball, in which a piece of metal was lodged for three years. Dr. Mackay gave the following history of the case:—

Peter Crummy, aged 37 years, brakesman, at present residing in the neighbourhood of Crook, says that in February, 1873, while cutting a metal pipe with a hammer and chisel, a fragment flew off and struck the left eye on its inner side. Being employed at the time near Sherburn Hospital, and fearing that the piece of iron had entered and was lodged in the eye, he immediately consulted a doctor, who assured him that his fears were groundless, and gave him some applications, which he used during the following three weeks, in which time the sight was lost. There were great pain and inflammation in the injured eye, and, to use his own expression, "it gathered," and was lanced by a surgeon. When seen by me, the eye was much shrunken, its internal structures were completely disorganised, and on the inner side of the cornea,

extending through the sclerotic, I observed a distinct cicatrix about half an inch in length. He stated that since receiving the accident, the pain in the eye, temple, and left side of the head was most intense, generally worse at night, and often he got no sleep for several days. He was very much emaciated, appetite poor, and exceedingly depressed mentally, as during the last few months the sight in the sound eye was gradually failing, in which, however, there does not seem to have been at any time severe, if any, sympathetic ophthalmia. I at once proposed excision; but as he objected, I recommended him to go to Newcastle Eye Infirmary, where he was also advised to have the globe removed. He still objected; but as the pain continued to increase, he consented to the operation last January. The eye was then excised in the usual way, and the piece of metal now shown was found in the site of the lens. He made a good recovery, returning to his employment in about three weeks, and although the pain in the head recurs slightly at intervals, he expresses himself as being greatly relieved, and states also that the sight in the uninjured eye has not deteriorated since the operation.

Dr. PAGE showed a leg amputated through the lower third of the femur, on account of a large cancerous tumour of the tibia, with the man, aged 25, from whom the limb was removed, and said: When I undertook, sir, to show this disease to-day, I did not anticipate being able at the same time to exhibit the patient. The wound, however, is, you see, perfectly healed, and as it is now more than a week since the man left his bed and came down stairs, I am glad to be able to afford you an opportunity at this early period—just twenty-two days after the operation—of examining the stump. There is nothing particularly interesting in the history of the case, nor in the appearance of the tumour. It is nearly two years since a swelling showed itself on the inside of the head of the tibia soon after and apparently the result of a blow. The swelling increased slowly for some time, but began to grow rapidly eight months ago, after the receipt of a kick. It is now six months since my friend, Mr. Arundel, of Gateshead, asked me to see the case with him. Amputation was then recommended, but the patient would not consent, and put himself under the care of a quack in Newcastle, who attended him till a month ago, when his case passed into other hands, and, finally, returned to Mr. Arundel. On the 21st March, with the kind assistance of Messrs. Arundel, Dixon, and Oliver, the limb was amputated, the stump being formed by an anterior skin flap cut from without, and a posterior flap made by transfixion—a method usually adopted by Mr. Russell in the Newcastle Infirmary, and which I can speak most favourably of from frequent observation. Mr. Lister's instructions were carried out; and

from the day of the operation I have not experienced one moment's anxiety about the man's condition. The patient never lost his appetite, slept well without opiates, had literally no constitutional disturbance, was only confined to bed fourteen days, and the wound healed throughout by first intention without the formation of a drop of pus. The man says he has gained already two stones in weight since the operation, and he is, as you see, using crutches. This is the first amputation I have performed—the first, indeed, I have seen treated from beginning to end by Mr. Lister's plan—and the result only still further confirms the very favourable opinion I have formed of the value of antiseptic surgery.

Dr. BEATSON exhibited a bursa patella, excised from a servant girl, æt. 18. The disease had existed for eight months, and had resisted all ordinary treatment. It formed a round prominent swelling in front of the patella. It was removed under anti-septic precautions. The wound healed, and the patient was up in a fortnight. The sac of the bursa was very much thickened, and contained a number of loose fibrinous bodies, some of them connected together by bands of lymph which stretched across the sac.

Dr. BYROM BRAMWELL showed the following specimens :—

1. An aneurism of the popliteal artery. The tumour was the size of a hen's egg, and was filled with a firm laminated clot. The specimen was of great interest from the fact that the patient was only 13 years of age, that there was no history of injury, and that the aneurism had undergone a spontaneous course. Dr. Bramwell was indebted to Mr. Lightfoot for the specimen.

2. A heart with an extreme amount of calcareous deposit around the mitral valve. The orifice of valve was slightly narrowed. There was no murmur during life.

3. A large aneurism of the descending thoracic aorta. The patient was for some weeks under Dr. Bramwell's care in the Newcastle Infirmary. For several weeks before his admission, he had been unable to sleep because of constant and severe pain in the back. Half drachm doses of iodide of potassium were given three times a day with the most happy results. The pain was relieved, and the patient was enabled to sleep. After his discharge from the Infirmary, this patient passed under the care of Dr. Bates, of North Shields, and continued to improve. He died suddenly some months afterwards from rupture of the sac. There was a previous history of syphilis. Dr. Bates had kindly sent the specimen to Dr. Bramwell.

4. A typical specimen of coal miner's lung or spurious melanosis. The case was interesting clinically, from the fact that there was no black expectoration during life.

5. A beautiful specimen of cancer of the kidney. The patient had been seen by several eminent physicians. The tumour weighed $2\frac{1}{2}$ lbs. Dr. Bramwell was indebted to his father (Dr. Bramwell, of Tynemouth) for this specimen.

6. A foetus in utero. Gestation had advanced to about the sixth month. The umbilical cord was twisted round the child's neck. Dr. Page had presented the specimen to Dr. Bramwell.

Dr. Bramwell drew attention to the fact that this specimen had been preserved in a solution of hydrate of chloral. He said : This solution had many advantages over methylated spirits. It is much cheaper ; it does not evaporate ; it is more cleanly and pleasant to work with ; it hardens the specimen, and does not so thoroughly destroy the colour of the preparation. The strength of the solution is *five grains to the ounce*. A large quantity of the solution should be used for each specimen.

Dr. GIBB said he had tried the iodide of potassium in large doses in cases of aneurism, and in cases of angina pectoris. His experience coincided with Dr. Bramwell's as to the beneficial effect of the drug. He remembered the case of cancer of the kidney. When he saw the patient, he carefully examined the urine, and found it free from blood and albumen. Dr. Keith, of Edinburgh, was of opinion that it was a cystic tumour, and that it might possibly be removed by operation.

Dr. NEWCOMBE showed a saw, and said : This instrument consists of a small circular saw, $2\frac{1}{2}$ inches in diameter, with the teeth well set out, to prevent gripping, and a small wheel at its side, both revolving on the same axle. This is connected by pivots with two side bars, which unite at the back, and are fixed into a long handle by which the instrument is held ; another handle is fixed above to guide the saw when working. The revolving action is obtained by an elastic band running from the small wheel to a larger one, which is worked by a handle or treddle. The utility of the instrument is chiefly exemplified in the *post-mortem* and dissecting room, where the head, spine, &c., may be much more easily opened than by the old tedious process of a straight saw. In the operating theatre, also, its convenience may be tested in many operations—as for diseased bone, exostosis, &c.

SHORT NOTES OF A SUCCESSFUL PRIMARY AMPU-TATION OF THE THIGH THROUGH THE SMALL TROCHANTER.

By F. PAGE, M.D.

I WAS asked, a few months ago, by Mr. Clark, of Ferryhill, to see this boy, aged 11 years, a few hours after a railway wagon had passed over his left thigh. We found a large, gaping wound extending from the inside of the knee to the perineum, extensive laceration of the muscles of the thigh, and the femur smashed to fragments where the wheel had crossed the limb, a little above its centre. The upper portion of the bone, stripped of its soft parts as high as the trochanter minor, protruded from the wound. The skin of the belly was undermined from the wound, and much bruised for two inches above Poupart's ligament.

It was late in the afternoon—nearly dark—the boy had lost a good deal of blood, and immediate amputation was imperatively called for. It seemed a case for disarticulation at the hip, but seeing the amount of accommodation and assistance at our disposal, and fearing the bleeding, which must inevitably take place while the head of the bone was being removed from its socket, might prove fatal on the spot, I determined to amputate through the small trochanter. Chloroform was administered by a railway guard, and another guard commanded the artery, Mr. Clark assisting me with the flaps. The stump was formed by rectangular antero-posterior skin flaps, and the bone sawn through the small trochanter. Very little blood was lost during the operation. Unfortunately, nearly the whole of the anterior flap sloughed, and consequently the bone is not now covered with a pad so good as it would otherwise have been ; still I am satisfied with the result, and in any other similar case would by preference amputate through the trochanter rather than through the joint, for the following reasons : 1st. It is easier and quicker to do so, and there is less immediate risk. 2nd. The result is better, for the insertions of the gluteal muscles not being disturbed, the rotundity of the buttock is preserved, and the stump contrasts very favourably in appearance with the deformity following amputation at the hip joint, besides affording the patient a much more comfortable seat.

I should like to add that I am persuaded good nursing in this instance saved the patient's life. I did not expect a recovery ; and had it not been for the firm, but gentle, treatment the lad received from Inspector Short, of the North Eastern Railway, who kindly undertook to nurse him, I am satisfied I should not have had an opportunity of showing you the case to-day.

NOTES ON A CASE OF EPILEPSY TREATED BY CHLORAL HYDRATE.

By EDWARD JACKSON, L.R.C.P., LOND.; M.R.C.S., ENG.

ALTHOUGH the case I have the pleasure of bringing before you this evening is not an instance of any rare or extraordinary disease, it is yet interesting in that it presents a fairly successful result from treatment in an apparently untractable instance of a disease that is constantly coming under the observation of medical men. The history of the case is briefly as follows:—

W. S., aged 15, a somewhat strumous-looking boy, with pallid complexion and weak muscular development, enjoyed good health until the age of $5\frac{1}{2}$ years. About that age he was severely kicked in the lower part of his back by a man in the street; this rendered him insensible for half an hour, and for a very long time afterwards the boy was extremely nervous. Before this accident he had evinced no tendency to fits whatever; but about six months after the accident he began to take fits of an epileptiform character, which occurred at intervals of two or three months. This state of things lasted until the boy was about nine years of age. About this time the recurrence of the seizures became much more frequent, occurring every fourteen or fifteen days. Accompanying this increased frequency of attack, the mental power of the boy became seriously damaged; his memory became deficient; his manners and ways odd and eccentric; his temper irritable, and occasionally very violent. It was at this time that he first came under treatment. Bromide of potassium was administered thrice daily with the effect of diminishing the frequency of the fits in a marked degree. His mental state was improved, and he was sent to a school where special attention was secured for his physical and moral management, and under this treatment, and the continued use of bromide of potassium, considerable improvement occurred, and the fits became only occasional.

Last summer, the boy's condition became much worse; the fits returned more frequently and severely, accompanied by a corresponding retrogression of mental power. The seizures came on three or four times every week, and altogether the boy's condition was very serious. Bromide of potassium was again administered in July last. A steady and regular administration of this yielded no apparent result, and the fits grew worse in character and more frequently recurred.

"The family history" of this case presents only two facts of interest. The younger children were all of marked rachitic diathesis, and the father is a man of very strong peculiarities of disposition and character, irritable and passionate in temper, and

fond of talking, with a wild volubility and language peculiarly his own, on any and every subject ; and it seems as if mental peculiarity in the parent had been transmitted to the offspring as mental disease—in other words, that the accident acting as exciting cause had but roused the latent predisposition to mental disorder into action.

The bromide of potassium having failed, and the boy's condition being so very deplorable, whilst casting about for some remedy for so sad a state of things, it occurred to me that hydrate of chloral might perhaps have some effect in preventing the seizures. The reason for this belief was that having found chloral hydrate of such powerful value in cases of acute convulsions, I failed to see why it should not have some effect in preventing chronic convulsive attacks like those occurring in epileptics. The case that showed me the power of chloral hydrate in arresting convulsions was one of chronic hemiplegia, in which on three separate occasions one dose of chloral sufficed to arrest very severe convulsions of the muscles of the affected side.

Accordingly, 10-grain doses of chloral hydrate were given to this boy thrice daily. This was in September last. For nine weeks no fit occurred. During this freedom from seizures the boy's mental condition improved in a marked degree. Having omitted to take his medicine regularly, a slight attack now occurred. After this the medicine was taken with greater regularity, and no fit occurred until New Year's-day. Oddly enough, when this occurred the boy had again neglected his medicine, and besides this, he had indulged much too freely in Yule-tide fare, and the boy was labouring under great excitement, because that his father—with an idea of giving the boy occupation—had apprenticed him to a joiner, and the boy could hardly sleep for the excitement so produced, and got up about four in the morning, so as “not to be too late for his work.”

Since that time he has taken the chloral regularly, and has had no return of the attacks.

The “post hoc” course of this case may, I think, be safely said to be “propter hoc” of the administration of the chloral hydrate, and the occurrence of only two fits in six months in a case where up to the administration of the chloral hydrate the seizures occurred almost daily. Herein lies the interest of the case.

This state of things seemed too good to last ; and I regret to say that since writing this case the boy has had some seizures, but chloral does not seem to have lost its effect on him, and this relapse does not remove the fact that only two fits came on during six months after the chloral was administered.

Dr. BRAMWELL said Mr. Jackson's case was one of great interest. The influence of chloral hydrate in controlling epileptiform convulsions was very marked. It seemed, however, to be rather a palliative than a curative agent. In proof of this was the fact mentioned by Mr. Jackson in his paper, that the fits returned as soon as the remedy was discontinued. Thirty grains of chloral hydrate administered a few hours before an epileptic was expected to take place would prevent its recurrence. In proof of this, Dr. Bramwell detailed the particulars of a case which had been related to him by Dr. Herbert Major, Superintendent of the West Riding Lunatic Asylum.

Dr. McDOWALL said : He remembered the case mentioned by Dr. Bramwell. It was a remarkable one from the fact that the fits occurred identically at the same time once a month, and never at any other time. Dr. McDowall doubted whether bromide of potassium or chloral did any good in the long run in cases of chronic epilepsy such as are met with in asylum practice. He had obtained the best results by making patients sleep at night with the head well raised.

Dr. ARUNDEL said : He had found bromide of calcium more efficacious than bromide of potassium, and detailed the particulars of three acute cases which had lately been under his observation.

Dr. MURPHY had obtained good results from a combination of bromide of potassium and chloral.

Dr. CLARK asked whether any symptoms of chloralism were observed by Mr. Jackson, such as congestion of the surface and extremities, tremor, etc.

Mr. JACKSON said no such symptoms had been developed. The remedy had been exceedingly well borne.

THE RELATION BETWEEN CROUP AND DIPHTHERIA.

By W. GOWANS.

MR. PRESIDENT AND GENTLEMEN,—When about to send notice to the Secretary of my intention to exhibit this specimen, I hesitated as to what name I should direct him to give it on the notice paper. This hesitation did not proceed from any doubt as to the pathological lesion, or character of the disease which caused the patient's death, but from the difference of opinion which exists in the profession about the nature and nomenclature of pseudo-membranous affections of the mouth, pharynx, and air passages, as well as certain other non-membranous diseases which are frequently included under the same name.

Upon consulting the writings of French physicians, we find that they are tolerably agreed in opinion that the two diseases, croup and diphtheria, are due to one specific poison. This, I believe, is greatly owing to the admirable Memoirs of Bretonneau, which he read before the Academy of Medicine in 1821, and who by his investigations gave to the disease the characteristics of a substantive affection, calling it by the name of "Diphtherite" in place of "Malignant Angina," which up to this time it had received. He insisted that the disease was not necessarily or even generally accompanied by gangrene, ulceration, or destruction of the inflamed tissue, and that when it reached the larynx, it constituted the disease described by Francis Home, in 1765, by the Scottish name Croup. He also stated that the disease had existed from the earliest times, as an excellent description of it was to be found in the writings of Aretæus, under the name of Egyptian or Syriac ulcer. He recommended the treatment which Aretæus prescribed as the most useful. The authors that followed him coincided with his views; but some of them having mistaken scarlatina anginosa for diphtheria, Troussseau, with the object of rectifying this mistake, wrote a work in 1829, giving the differential diagnosis of the scarlatina from the diphtheritic disease. Dr. Abercrombie, in 1827, in his work on diseases of the stomach, described an epidemic of diphtheritis which prevailed in Edinburgh in 1826, and protested against confounding the disease with croup. Cheyne and Tweedie, about the year 1833, gave publicity to similar opinions, and the most recent authors describe each as a disease *sui generis*. In the Nomenclature of Diseases, drawn up by a joint committee appointed by the Royal College of Physicians of London, they have separate places, and are directed to be registered under their respective headings.

The views of Francis Home, published more than a hundred years ago, seem to have affected the opinions of English physicians,

for ever since that time a disease, croup, has been described in their text books. With the exception, however, of a general acknowledgment of the pseudo-membranous nature of the affection, all is uncertainty and disagreement, and during the last six years a few distinguished London observers have at length declared their conviction that the disease so described is a combination of the morbid anatomy of diphtheria with the clinical symptoms, mixed, of laryngeal diphtheria and stridulus laryngitis.

The distinctive features insisted upon by those who believe that croup is altogether a different disease from diphtheria are numerous and important, and when they are arranged side by side form a picture so different from each other that we would feel astonished that any one who had seen both diseases could possibly confound them, did we not remember that what has been stated as a most important distinction by one observer, is ignored or denied by another. The fact that so many painstaking and experienced physicians believe them to be one disease is proof, to my mind, that a large proportion, if not all, of these alleged characteristics have no real existence.

It is the opinion of a celebrated pathologist (I think Professor Laennec) that diseases cannot be more readily distinguished than by their anatomical characters. Some have, therefore, attempted to show that the morbid anatomy of diphtheria is different from that of croup : that, although in both you have a false membrane, in the former not only is it upon the surface, but also infiltrated into and underneath the mucus membrane, and accompanied by ulceration and sloughing of the inflamed tissue ; while in croup the false membrane merely covers over the surface of the mucus membrane, without infiltration, ulceration, or destruction of the tissue underneath. I think, however, that the cases I am about to relate bear out the opinion expressed by Bretonneau, long ago, which he verified by fifty *post-mortem* examinations, that the anatomical characters of the two diseases are identical.

In South Shields, pseudo-membranous inflammation of the mouth, pharynx, and air passages have prevailed to a considerable extent lately. With your permission, I will give you a short sketch of the disease as it appeared in my practice. About the middle of November, I observed, patients frequently consulted me for a peculiar inflammatory affection of the tonsils and pharynx. The parts were dull red, not much tumified, and there was no great pain in swallowing. They complained of stiffness in the throat, and a feeling as if a foreign body was sticking on one side of the pharynx. Sometimes a small yellowish patch was observed on one, or both tonsils. The constitutional disturbance consisted of a rigor, sweating, debility out of all proportion to the disease, and depression of spirits. Next, I noticed that when a case

occurred, frequently two, or more, of the same family became affected, and this fact first aroused the suspicion of a specific element in the disease. Ultimately, five members in one family suffered from this complaint ; a sixth, a boy of 16, had a considerable patch of membrane on each tonsil ; a seventh, a child of 6, had membrane on each tonsil, with a great discharge from nose, blanching of skin, and debility, and was confined to her bed-room for several weeks ; an eighth, a young gentleman, 19, had the tonsils, uvula, soft palate, and arches of palate, completely invested with pseudo-membrane, which became fetid, and separated, leaving the mucous membrane red underneath, but not ulcerated, and discharging an unhealthy-looking secretion, about the same colour as the false membrane. He also had haemorrhage from the nose. When convalescent, he inadvertently exposed himself to cold, when he had a relapse of the symptoms, and membranous exudation, but they quickly disappeared on treatment. These cases had the morbid anatomy of croup, being free from ulceration, but the position of the disease, and probable cause, indicate diphtheria. The children of another family were in the habit of playing with these children.

One boy (C.), was in the back-yard of their house on the Saturday ; on Sunday, he complained of slight pain in the throat. His mother had diphtheria twenty years ago, and she gave me an excellent description of the disease, as it occurred in this boy's case. She said : "On Sunday, when he first complained, I looked into his throat, and observed one side inflamed, and a yellowish-white patch, less than a threepenny piece, on the left tonsil. Recognising this as similar to my throat, long ago, I immediately sent for the family attendant. Next day (Monday) the patch had increased to double the size, and another appeared on the right tonsil. On Wednesday, I saw a white line passing down the back of the pharynx, and the doctor attempted, unsuccessfully, to remove it. On Thursday, these had much increased ; his voice became hoarse, and a croupy cough distressed him. On Friday, these symptoms became aggravated, and suffocative fits set in." On Saturday morning, I was called in to see him, as to the propriety of performing tracheotomy. I found the roof of the mouth, soft palate, uvula, and pharynx covered by a dirty yellow coloured thick membrane. Very little of the mucous membrane could be seen that was not so invested. The breathing was laryngeal, and a croupy, barking cough, and suffocative fits, frequently distressed the boy. At these times he started up into a sitting posture, and after they were over, threw himself down in bed. The chest was resonant on percussion, and beyond a deficient supply of air entering the lungs, nothing abnormal was detected. There was great tremor of the muscles at the root of the neck. The face was becoming

purple, and the mother said the features were getting a pinched look. The breath was very fetid, and had been so from the first. He had stopped taking nourishment that day. Pulse 140.

An operation was recommended, which I performed in the usual way, cutting slowly down to the trachea. Drs. Wilson and Rathborne were present at the operation. Immediately before entering the trachea, the pulse became very bad, respiration ceased, the face cold, blue, and covered with a clammy sweat, but respiration was re-established by artificial aid, after the trachea had been opened, and the canula placed in position. At length the breathing was satisfactory, the pulse improved, the colour of the face natural, and the surface warm. Beef tea and brandy enema was administered, and warm bottles, etc., applied to promote re-action. Dr. Rathborne remained with the patient during the day and night. At my evening visit, all was going well. He wrote on a slate, when he wished to communicate with his friends, and had taken nourishment. The breathing was easy, and he had slept. This continued till three a.m., when the patient started from sleep, tore the canula out of the trachea, and, before they could replace it, the child died of suffocation.

This case contains some of the so-called distinctive characters of both diseases. There was no ulceration or destruction of the mucous membrane to be detected. The body was of stout habit, ruddy complexion, and the age, all of which are said to be distinctive of croup. In fact, the medical attendant had pronounced it a case of croup. Yet the description of its progress, from the tonsils to the larynx, indicates diphtheria, and it was the means afterwards of infecting others, both adults and children, and the disease in these cases never reached the larynx. Two of them were followed by paralytic symptoms.

(F.) Six years, a stout florid boy, was the bedfellow of his brother (C.), the subject of the preceding case. He slept with him till the morning on which the disease was observed in his brother's throat, and three days after it manifested itself on his tonsils, and extended over the soft palate and uvula. The chief features of this case were the thickness of the false membrane, its persistence, and the great depression of the heart, the pulse being extremely weak, and very unequal, although the general condition was not bad. He has still an inflamed throat, but now free from pellicle.

(M.) Mother of the preceding children, had diphtheria twenty years ago, at which time her brothers and sisters also suffered from the disease. She is at present seven months pregnant, and is said to have tubercle in the right lung, for which she wintered in Jersey three years ago. She had been nursing her children, and on the 12th, when her son was suffocating, from the tracheal canula having been torn out, she, in the excitement of the moment, put the canula to her mouth, and blew through it, to assure herself it

was not blocked up. On the 15th, small patches were seen on her left tonsil. The soft palate, tonsils, and uvula, were of a dusky red colour. 17th. Throat looked worse; the soft palate, tonsils, and uvula were much swollen; a thick greyish membrane covered the right side of the soft palate; the arches and tonsils were covered by a thicker membrane. Pulse 110, very weak, and she was unable to raise herself in bed without assistance. 18th. The membrane, in some places, looked detached from the mucous membrane underneath, and had become very fetid, and an unhealthy looking discharge could be seen oozing out underneath it. A solution of permanganate of potash (3 grs. to 1 oz. of water) was used with a local anaesthesia apparatus, so as to send a stream of the solution with force against the membrane. This had the effect of detaching the greater part, the patient spitting it out in considerable pieces, leaving the mucous membrane raw-looking, but free from evidence of ulceration. 19th. Some limited return of the membrane had taken place, but it was thin and circumscribed. The mucous membrane exuded an unhealthy secretion, the same colour as the false membrane. Patient went on well from this time; she, during her convalescence, complained of difficulty in swallowing fluids, and defective sight.

(N.) Husband of the above; slept with his wife on the 14th. She showed symptoms of diphtheria on the 15th. On the 18th he had rigors and sweating, and felt ill. He asked me to look at his throat. It had the prevalent inflamed appearance, and a small patch on tonsil of pseudo-membrane. 19th. Patch larger, and on left side. Applied tr. ferri with brush several times on membrane. 22nd. Had another rigor during the night. There was still a patch on the left tonsil; local applications were continued. 24th. Patch disappeared; throat still red.

A daughter of the preceding, three years old, who, with the other children and governess, not ill, had been living from home, at lodgings, returned four days ago. She complained to me of her throat, which was inflamed, and had a small patch on tonsil of pseudo-membrane. Tr. ferri brushed over it. Next day the patch was gone, but it returned the following day. A repetition of tr. ferri caused it to disappear, and it did not return. The throat is still inflamed.

(K. and I.) Sisters of the above, are suffering from the prevalent inflamed throat, but without any pellicle having formed.

A few days after the operation on C, Dr. Wilson, Dr. Rathborne, and myself were each attacked with the prevalent sore throat, rigor, sweating, and debility, and it was with difficulty I could continue my professional work. In fact, I was obliged to give up most of my work for some days. Another professional friend complained of suffering in the same way. He also had been attending bad cases of diphtheria.

(Case H.) Child, one year and ten months ; healthy child, been ill for about a week, but its parents thought it merely a cold. The glands and cellular tissue of the neck were much swollen. An acrid discharge from the nose, the mucous membrane of which looked unhealthy ; the throat much swollen, and there was pseudo-membrane on the tonsil and gums, in the position of the last molar tooth. The mouth and nose bled on being touched by the spoon or spray apparatus. The breath was very fetid. The child was hoarse, and had a slight whistling in larynx, and croupy cough. The nasal fossæ and throat were irrigated with the permanganate solution, and the usual treatment adopted. The child gradually improved from 13th to 19th, when the mother got careless in attending to the temperature of the room, and other treatment. The symptoms again became aggravated. After this, more attention was paid to the nursing, and the child made a good recovery.

(S.) Child, thirteen months old, had been ill for some days. The mother, believing it a cold on the chest, applied poultices. Dr. Rathborne saw the case first on the 17th. Some large bronchial rales were heard, the child was not hoarse, but had difficulty in breathing, without physical signs to account for it. Next day the child was hoarse, weak, and feverish, and had a croupy cough. Throat examined, but no pellicle to be detected, only redness. Next day, I saw the child ; he was voiceless, and had a whistling in the windpipe on respiration. He had a feeble, croupy cough, rapid pulse, and feverish. He had a blanched look, and could not lie on his right side. A deficient quantity of air was entering the left lung. Throat carefully examined, and found free from pseudo-membrane. The glands and cellular tissue of the neck were swollen. Next day, the patient was much in the same condition, the pharynx being free from pellicular exudation ; but the following day, a patch appeared, which spread till the 25th, when the whole pharynx and palate were coated by it, and the child was very feeble, with occasional fits of suffocation. The membrane then became very fetid, and separated, and by the 30th the pharynx was clear, with the exception of isolated patches. On that day, the child died of asthenia.

Post-mortem Examination.—Surface of the body blanched, as if death was the result of haemorrhage. Mucous membrane pale. Not much evidence of false membrane on pharynx ; and, had it not been observed to separate and discharge during life, its presence might have been overlooked. Larynx and trachea coated with pellicular exudation, and at the bifurcation of the bronchi formed a tube, which passed into the right bronchus, and completely blocked up the left one, so that very little air could have passed into the left lung. Both lungs were very pale and crepitant, except at the base, where the larger divisions of the bronchi are, and a piece of each lung, in that position, was hepatized. The

sub-divisions of the tubes were seen coated with false membranes, and a fibrinous clot was found in the heart.

This case is one of very great interest. In an early stage of its history, in every respect, it answered to the description of membranous croup, occurring in a weakly child. Subsequently, by extension of the local lesion, the air passages became identical with the case of diphtheria (C.) already detailed. The diphtheria case, however, which began in the pharynx, and travelled downward, had the typical clinical symptoms of croup, and died from suffocation. The croup case, which began in the trachea, and extended upwards, had the typical clinical symptoms of diphtheria, and died ultimately from asthenia.

Judging from the after-death examination alone, we should be led to a decided opinion that the disease from which the child died was croup. A false membrane was found in the trachea and larynx, without infiltration or ulceration of the mucous membrane. It was apparently limited to the larynx trachea and its sub-divisions, because previous to death it had separated from the pharynx and mouth. Thus, in the first stage, it was croup, in the second stage it was diphtheria, and in the *post-mortem* appearances it was croup. What stronger evidence could be adduced of the oneness of the disease?

A boy, aged 3 years, who had been in indirect communication with this child during his illness, was seized the night following his death with sudden and alarming croup symptoms, stridulus breathing, crowing respiration, and fever. After the application of hot water sponges to his larynx for two hours, putting him into a warm room and administering an emetic, the symptoms abated, and the following day, with the exception of the inflammation of pharynx and feverishness, which still keep him confined to his room, he was well.

His brother also suffered from like symptoms, followed by a severely inflamed throat, but without pellicular exudation.

Were these cases of stridulus laryngitis of a specific character, similar to the inflamed throats which occurred in connection with the cases of diphtheria? I think the fact of their rapid recovery precludes the idea of their being membranous croup. (Cases are given under like circumstances by Bretonneau, New Sydenham's Society Translation, pages 116, 117.)

The opinion is held by some that croup is not contagious, and therefore, must be a distinct disease from diphtheria. Sporadic cases of croup are common, and would lead to this belief; but it must be remembered that diphtheria also frequently occurs in the same way. Some of the most marked cases of diphtheria which have come under my observation have been sporadic cases. One which happened in a young married lady, who had much albuminuria from the commencement of the attack, and primarily manifested

itself in the nasal fossæ, travelling down the pharynx and larynx, and died on the twelfth day from blood poisoning, was a case of this kind. No one in the house or neighbourhood, so far as I could hear, suffered from the disease; but her pet dog, which had been much about her during her illness, died shortly after from suffocation, having previously shown symptoms of sore throat. I mention this, as the lower animals are known to be peculiarly susceptible to croup, identical in its symptoms and organic changes with the disease in the human subject, and which caused Cullen to name the disease "Cynanche Trachealis." Another sporadic case which recovered, was followed by paralysis of the muscles of deglutition and squinting.

Judging from such cases as these, we might come to the conclusion that diphtheria, too, was not contagious; in fact, this opinion is held by many. But I think there is ample evidence that both diseases are contagious. They both occur epidemically, and during the same epidemic. Our own profession has suffered severely by the loss of many promising members, owing to the contagious character of diphtheria.

The writings even of those who maintain the dual character of the diseases contain remarkable proof that croup also possesses the same power. It is a significant fact that the first two fatal cases detailed in Home's work occurred in one family, a brother and sister, who died within a few days of each other.

Albumen in the urine has been frequently observed in both diseases, and paralysis has been observed as a sequel to croup by Jenner. His testimony in this respect is particularly valuable, because, till recently, he held that true or membranous croup and diphtheria were distinct diseases. Larger experience, however, had made him alter his views, and he now regards the evidence all but conclusive on the other side.

From the preceding, I think the following propositions are proved. 1st. That the specific poison which gives rise to diphtheria may manifest itself by inflammation of the pharynx, terminating in resolution, or by a mere speck of false membrane on one tonsil, and all the intermediate degrees between this and a complete covering of pseudo-membrane over the whole air passages.

2nd. That the disease may begin primarily in the trachea, and travel upwards, or in the pharynx, and travel downwards.

3rd. That these cases are identical in their etiology, morbid anatomy, and clinical symptoms, with the disease described as "Membraneous or true croup."

Another child in the neighbourhood of the cases first detailed has since died of "croup," after tracheotomy had been performed. A number of deaths have occurred in the practice of other medical men in the town, some registered diphtheria, and others croup.

Mr. SPIER said : Through the kindness of the medical men of South Shields he had been enabled to see many of the cases mentioned by Mr. Gowans in his paper. All of them occurred in houses where there was some defect of drainage. Such a state of matters had no doubt existed for a long time, and was not, therefore, of itself the sole cause of the disease. A supplementary cause was probably the dry state of the weather. In wet weather the sewers are full, and the sewer water forms a trap to the house drains. In very dry weather emanations can more readily get from the main sewer into the house drains ; and in very dry weather emanations are abundantly given off from the sides of the main drains, which have been previously saturated with sewage matters. The relation of croup to diphtheria was a difficult point to settle. He himself thought there was a close ethiological relationship between many diseases which at present were considered to be due to separate and distinct causes. The diseases he particularly referred to were diphtheria, dysentery, typhoid and scarlet fever.

Dr. GIBB said he had seen, with Dr. Robson, a patient who lived next door to one of the fatal cases mentioned by Mr. Gowans. He thought that case was one of ordinary scarlet fever. The rash was well marked.

Mr. MORGAN asked if Mr. Gowans had found albumen in the urine during the first few days of the disease. It was said to be a means of distinguishing diphtheria from scarlet fever. In the latter disease the urine does not contain albumen for some time.

Dr. HUNTLEY said : He did not understand how any one could think croup and diphtheria one and the same disease. Croup generally attacked young children, and does not pass to other members of the family. Diphtheria, on the other hand, attacks persons of all ages, and is very infectious. He thought the larynx in young children was very much disposed to take on inflammatory affections.

Dr. ARUNDELL asked if the patches on the throat appeared prior to the constitutional symptoms. In other words, did the disease begin as a local affection ?

Mr. GOWANS, in reply, said in some of his patients constitutional symptoms appeared before the throat affection. In some of the cases albumen was found in the urine at the beginning ; in other cases there was none. He thought he had observed a direct relationship between the severity of the disease and the amount of albumen in the urine. Under the term croup many diseases had been included, such as simple laryngitis and laryngismus stridulus. His paper only referred to true or membranous croup.

Mr. HUNTLEY said he spoke not of laryngismus stridulus, but of that fatal infantile disease called croup.

THE PATHOLOGY OF CATARRHAL PNEUMONIA.

By J. W. MACDONALD.

THE lung has been compared to an immensely extended mucous membrane. Regarding it as such, we find that, like other mucous membranes, it is subject to two forms of inflammation, croupous and catarrhal. In the one case, a corpuscular exudation is poured out analogous to catarrh ; in the other, a fibrinous secretion analogous to the false membrane of croup. Here, however, the analogy must end, for when we compare the diseases clinically, we find that croupous inflammation, which in most mucous membranes is attended with dire consequences, in the lung is known as simple acute pneumonia, in which we can look forward to a favourable termination. While catarrhal inflammation, which, in ordinary mucous membranes, is a mild affection, when seated in the lung becomes one of the most serious of diseases, and in its chronic form produces the conditions essential to pulmonary phthisis. The investigations of Colberg prove beyond a doubt the existence of an epithelial lining in the pulmonary alveoli, and it is to this epithelial lining we must look for the first structural changes in catarrhal pneumonia. If the development of the lung, like all other glands with ducts, begins by an epithelial outgrowth from the mucous layer of the blastoderm, it is natural to infer that in early life the alveolar epithelium would attain its greatest development, and we may in this way account for the fact that in children below the age of five years, the epithelial cells of the alveoli are much larger ; they contain more protoplasm, and adhere less firmly to the alveolar surface than at a later period. Owing to these circumstances, almost the only form of pulmonary inflammation in children is catarrhal pneumonia. The disease occurs under the following conditions :—

1st. *In connection with Bronchitis.*—The alveoli of the lungs in childhood are ready at any time, as we have seen, to take an inflammatory action ; and, therefore, it is easy for inflammation of the bronchial mucous membrane to extend into the alveoli. This form of the disease is usually confined to badly nourished scrofulous children weakened by previous disease.

2nd. *As a sequel to Measles.*—During the stage of desquamation, the inflammatory action which commonly exists in the nasal and tracheal mucous membrane, extends to the minute bronchi, whence the transition to the alveoli is comparatively easy.

3rd. *The presence of blood in the pulmonary alveoli is a frequent source of Catarrhal Pneumonia.*—In experiments upon animals, into whose trachea I injected blood taken from their own bodies, I found that in a little more than 50 per cent. of the cases the injection was followed by catarrhal pneumonia in the parts of the

lung to which the blood found access. Much of the evil which follows haemoptysis is due to this cause.

To this also we may trace the effects of bronchial haemorrhage, and any bleeding from the respiratory tract, where the blood, escaping from the mucous surface, trickles down the bronchial tubes and reaches the alveoli. Since my arrival in Nova Scotia, eight months ago, I have examined a large number of Mic-Mac Indians suffering from pulmonary disease, and almost invariably I have found that their symptoms began with haemoptysis.

4th. Catarrhal pneumonia may exist as a primary affection, and may run its course independently of bronchitis or any other disease. These cases are much more common than is generally supposed, and there can be little doubt that a large proportion of the cases of phthisis which are met with have their starting point in this form of pulmonary inflammation.

Now, supposing the pulmonary alveoli to be irritated by the presence of blood, or by any other cause, the first change which takes place is hyperæmia of the alveolar wall. The capillaries becoming loaded, the serum of the blood which they contain escapes through their coats into the alveoli. The epithelium of the alveolar wall swells, and produces a thick layer of protoplasm. This soon becomes detached, the epithelial cells being stripped off in the form of bands. The cells then separate and constitute oval-shaped bodies with distinct nuclei, and opaque granular contents. These nuclei divide and sub-divide, setting up an active proliferation of cells, which, spreading through the stagnant serum, rapidly fill up the alveoli. The first stages of this process can be observed four or five hours after blood has reached the alveoli, and the vesicles are filled usually by the fifth day. Under favourable circumstances the cells begin now to shrivel up and disintegrate, the products of inflammation are partially absorbed and partly expectorated, until the lung returns to its healthy state. Such are the effects which we observe by experiments upon animals. Let us see how far clinical experience supports these views. In many cases of bronchial haemorrhage, we can find, a few hours after the commencement of the attack, that some part or other of one lung is dull on percussion, which previously to the haemoptysis was healthy. There can be no doubt that this dulness is owing to the extravasated blood which has filled up the air vesicles at that part of the lung. A few days afterwards all the signs of pneumonia can be found at the seat of dulness. The patient expectorates a blackish mucopurulent matter, and when placed under the microscope this expectoration is found rich in the cells characteristic of catarrhal pneumonia. This pneumonia is very frequently overlooked, but a little care will enable us to find it after a very large proportion of cases of bronchial haemorrhage. The favourable cases, which fortunately are very common, catarrhal pneumonia ends by the

ninth or tenth day, the production of cells ceases, those already formed are partly absorbed and partly expectorated, resonance returns to the affected portion of the lung, and its normal condition is re-established. But if the proliferation of cells in the alveoli be profuse and long continued, the disease then passes on to a chronic catarrhal pneumonia, or a retrograde metamorphosis begins, which we shall afterwards consider, that is cheesy degeneration. I shall pause here to repeat that the whole course of catarrhal pneumonia may be said to consist, so far as the local effects are concerned, of the following stages:—

1st. Hyperæmia of the alveolar walls and exudation of serum into the alveoli.

2nd. Swelling of the epithelial cells, which are stripped off in bands.

3rd. Separation of the individual cells, and rapid increase of them by proliferation from their neuclei until the alveoli are completely filled by them.

4th. This mass of cells losing its fluid and becoming dry constitutes cheesy degeneration.

5th. Softening of the cheesy deposit and formation of cavities.

CHRONIC CATARRHAL PNEUMONIA.

The want of a correct knowledge of this disease has led to a good deal of confusion in regard to its nosology. As a rule, it has been classed under the head of tubercular phthisis, and designated "Infiltrated Tuberculosis," "Gelatinous," or Tubercular Infiltration," and more recently "Tubercular" or "Cheesy pneumonia." It may be the result of acute catarrhal pneumonia, but in most cases it arises from a catarrhal inflammation spreading from the minute bronchi to the pulmonary alveoli. The process by which catarrhal pneumonia arises from a previously existing bronchial catarrh is a somewhat complicated one, for two divisions of the lung tissue are involved in the changes which ensue. 1st. The bronchial tubes ; 2nd. The pulmonary parenchyma.

The bronchial catarrh, which forms the starting point of the disease, is characterised by an expectoration of a tenacious sticky material. The efforts to cough this up from the smaller bronchi are frequent, severe, and often unavailing. Post-mortem examination at this period shows the larger bronchi loaded with this secretion, many of the smaller ones are filled with it, their walls are infiltrated with corpuscular elements, and the epithelium is destroyed. Rindfleisch attributes these characters in the minute bronchi to the early disappearance of the basement membrane which, in the trachea and larger bronchi, serves as a "safeguard against the extension of catarrhal processes into the deeper tissues." Hence, the narrower the bronchi the more likely are they to become blocked by swelling of their lining membrane. The continuance

of the secretion, the failure of the patient's powers, and the ease with which a compensatory dilatation takes place in other parts of the lung combine to render the secretion which fills the bronchial tube a permanent plug. Having once become stationary, it produces the effects which usually attend the presence of a foreign body:—

1st. The whole of the structural elements of the bronchial wall is increased, and especially is there a progressive thickening of the connective tissue surrounding the bronchial tubes. This constitutes the "Peribronchitis Chronica" of Virchow. When tubes so affected are cut across they greatly resemble solid nodules, and have been constantly mistaken for tubercles.

2nd. The secretion may be excessive and distend the bronchial tube, and in consequence the walls may become thin.

3rd. The bronchi may become ulcerated in consequence of the catarrhal inflammation. Debilitated by the corpuscular infiltrations with which the walls of the bronchi are loaded, this ulceration becomes a really destructive process. It has been shown by Virchow that these ulcerations frequently lead to fully developed phthisical cavities.

The effect produced in the parenchyma of the lungs can be illustrated experimentally, for we can produce plugging of the bronchial tubes in animals by section of both vagi nerves, when it will be found that morsels of food will pass from the pharynx into the trachea, and will ultimately become fixed in some of the bronchial ramifications. The first effect produced by the presence of this plug in the bronchial tube is collapse of the part of the lung to which the affected branches leads, in fact, the condition of atelectasis is produced. By the elasticity of the vesicles themselves the residual air is expelled, so that ere long the atelectasis is as complete as that form of affection which is found in the lungs of children who have never breathed. If we examine the lungs at this stage, depressions can be seen on the pleural surface corresponding to the collapsed lobules.

The next step in the process is a very important one. The condition of atelectasis is followed by congestion of the alveolar walls, and by exudation of serum into the alveoli.

In the lung of a child which has never breathed, the capillaries occupy a space proportionate to their bulk, but when the lung has assumed its functions and respiration has commenced, they undergo a wonderful development, both in size and numbers. If, however, the lung now returns to the condition of atelectasis, the capillaries cannot accommodate themselves to the unnatural change, consequently they are too crowded, and by pressing upon one another the blood does not readily get away from the alveoli. Congestion, followed by exudation of serum is the result. Thus we have the starting point of catarrhal pneumonia. The collapsed alveoli are

again distended by the serum, and the depressions which existed at the points of atelectasis become filled up, or may even rise above the surrounding lung tissue. A lung in this condition presents an appearance so closely resembling the structure of the spleen that "Splenization" is the term which is usually applied to it. Once splenization is established, inflammation readily follows, and the process is identical with that which we have described under acute catarrhal pneumonia.

TERMINATIONS OF CATARRHAL PNEUMONIA.

We have seen that in acute catarrhal pneumonia the affected portion of the lung has a decided tendency to return to a healthy condition. It is quite possible for the chronic form to terminate in the same manner. After a certain period the proliferation of catarrhal cells, those already formed begin to disintegrate, probably by undergoing fatty degeneration, the contents of the alveoli thus become liquified, and absorption and expectoration completely remove the inflammatory products. But when the proliferation of cells is profuse and long continued, another and very important change takes place, namely, cheesy metamorphosis, which we shall now briefly consider.

Cheesy metamorphosis (cheesy degeneration, or caseation) may follow any form of pneumonia. As a result of croupous pneumonia it is very rare; after acute catarrhal pneumonia it is more common; as a termination of chronic catarrhal pneumonia it is almost the rule. The change simply consists in a drying up of the contents of the alveoli after they have been filled by the inflammatory products. The catarrhal cells become packed together, they encroach upon one another, and lose their rounded shape, the watery part is squeezed out of them, and a dry cheesy mass remains.

Virchow has done much to clear up the confused opinions regarding cheesy metamorphosis. The prevailing idea held regarding it was that it was one of the specific peculiarities of the gray and transparent tubercle, and that the fact of any material undergoing cheesy degeneration was a proof that that substance was of tubercular origin. Virchow and others proved that many substances having no relation to tubercle, such as cancerous tumours, haemorrhagic deposits, lymphatics enlarged by hyperplasia of their cells, encapsulated masses of pus, &c., can undergo cheesy degeneration, and thus Lænnec's theory of tubercular infiltration has been disproved. Cheesy metamorphosis is of vital importance, on account of the great tendency of the deposit to break down and form cavities. When it does so quickly, it constitutes "Phthisis Florida," or galloping consumption. If the process is more slow it comes under the head of ordinary chronic phthisis, or if the cell growth is not so abundant as to lead to a compression of the vessels in the alveolar walls, the cheesy deposit may become more inspissated, the organic

constituents may be absorbed while the inorganic remain, and thus a calcareous deposit is left in the lung.

Lastly, the cheesy mass, even at its fully developed stage, is capable of being liquified by fatty metamorphosis, and then re-absorbed.

Simultaneously with the changes in the cellular elements above referred to, a very important process takes place around them. This is an abundant formation of connective tissue. If the cheesy mass forms a calcareous deposit, that deposit is encapsulated by connective tissue. If it has undergone liquification and absorption, connective tissue fills its place; hence it is that the lung at these places does not again become pervious to air, but becomes a tough, indurated substance. This connective tissue gradually contracts, so that the lung occupies less space than in the healthy state, the thorax is diminished, and the bronchi are dilated into round or oblong cavities. According to Niemeyer, this is the most frequent mode of formation of cavities in chronic phthisis.

Cheesy degeneration is the condition which, since the days of Laennec, has been styled tubercular infiltration. In the light of modern pathology only one kind of tubercle is recognised, viz., miliary tubercle, but even here, considerable discrimination must be employed, for many cases of what was considered miliary tubercle are now found to be bronchial tubes cut across, whose lumina are filled with cheesy contents, or whose walls are thickened and surrounded by alveoli filled with a cheesy infiltration.

Every day convinces me more and more of the immense number of cases of pulmonary disease which are due to catarrhal pneumonia. Less than a year ago, I had the honour of reading a paper before your Society, in which I endeavoured to prove that catarrhal pneumonia was frequently produced by bronchial haemorrhage.

Since that time I have met with a considerable number of cases of acute and chronic catarrhal pneumonia, which I could trace to haemorrhage from the bronchi as their cause. Convinced in my own mind that the danger to such patients was a continued proliferation of the catarrhal cells in the pulmonary alveoli, I directed my attention to the means of arresting this development. Iodide of potassium seems to answer the purpose. I am in the habit of giving 2 grains of the iodide with 5 to 10 minims of ipecacuan wine and 10 to 20 minims of the tincture of the balsum of tolu three times a day. The results have been very good; many cases have recovered, which had long been given up as incurable tuberculosis. I only mention the treatment here in order to recommend a trial of it. It is by no means new, but has hitherto been used in pulmonary disease without discrimination. Perhaps at some future time, I shall have the pleasure of communicating more fully my experience respecting this mode of treatment.



